SYSTEM AUDIT REPORT NUMBER 04/35812/TV02/AS-S03	NQA NATIONAL QUALITY ASSURANCE, USA

THIS REPORT RELATES TO A/AN SURVEILLANCE/TRIENNIAL VISIT ON 6/22-25/04

Company: Marshal Space Flight Center	**Other Sites Visited:** 1. N/A
Address: Marshall Space Flight Center, A L 35812	2. N/A

Scope:

ISO 9001:2000: All Products and Services Provided by the Marshall Space Flight Center. MSFC Supports the NASA Agency Infrastructure and is a Major Contributor to All Its Scientific and Technical Enterprises.
AS9100: Design, Development, Production, Installation and Servicing of Flight Hardware, Flight Software, and associated Ground Support Equipment Interfacing with Flight Hardware and Fight Software.

Standard(s): AS 9100B	**Support Documentation(s):** AS9101B	**Non-English Languages Used:** N/A

Comments/Concerns of the Assessment Team:

Noncompliances noted are minor in nature
Previously identified noncompliance has been rewritten in this report.
Recommend continued registration to AS 9100

The visit is deemed to be:	**Corrective Action Plan (CAP) Instructions:**
☒ **Satisfactory** ☐ **Unsatisfactory** *Unsatisfactory visits may result in a change to the next audit activity.*	☒ Return CAP in 20 working days (all NCs, Obs & Ols). Certificate processing initiates after receipt/acceptance of CAPs. ☐ AS & QS-9000 NCs must be closed prior to certificate issuance. ☐ Return CAP in ten days for Major NCs issued during surveillance.

NQA ASSESSMENT TEAM		**COMPANY INFORMATION**
LEAD AUDITOR: Rick Giguere		MGT. REP.: Axel Roth
TEAM: Trudy Keaveney	TEAM:	QUALITY MANUAL (REV & ISSUE DATE):
TEAM:	TEAM:	Rev. M May 26, 2004

NQA, USA Representative Signature and Date:	Company Representative Signature and Date:	
Rick Giguere 6/25/04	D D Miller 6/25/04 for Axel Roth	

SYSTEM AUDIT REPORT NUMBER: 04/35812/TV02/AS-S03

NQA National Quality Assurance-USA

AUDIT MATRIX

X or √ indicates reference point for assessment. X or √ through entire box as applicable to indicate actual function/process audited against the ISO 9001:2000 requirement. X or √ in next visit block indicates planned section for next activity. Estimated duration is 45 minutes.

Note: Asterisk (*) indicates requirement to be reviewed at each activity.

ISO 9001:2000 Reference	Clause Title	Management Rep	QD 50, MTM	QD02, PMC	QD 40	HEI	TD 73/ QD 12/ AD10	MPLM / FD24/ COLSA	MSG / SD4/SD44/SD43	QD 30/ ED 37	PRL ad20/20	ECLSS /ED24/20	QD30/QD40/PS30	AD50	ED 43		NEXT VISIT PLAN
		SPECIFIC ISO 9001:2000 REQUIREMENTS FUNCTIONS/PROCESSES AUDITED DURING THIS VISIT															
4.2.1 & 4.2.2*	Quality Manual *					X											X
4.2.3	Document Control							X	X	X					X		
4.2.4	Quality Records							X	X	X					X		X
4.1, 5.1, 5.2, 5.3, 5.4.2, 5.5	Management Activities	X															
5.4.1*	Quality Objectives*	X	X	X													X
5.6*	Management Review *	X	X	X													X
6.1 & 6.2	Resources & Competence							X	X	X							
6.3 & 6.4	Infrastructure & Work Environment							X	X	X							
7.1	Product Realization Planning							X	X	X							X
7.2	Customer Related Process & Comm.										X	X					X
7.3	Design & Development										X	X					
7.4	Purchasing												X				
7.5.1 & 7.5.3	Process Provision and ID&T Activities							X	X	X							
7.5.2	Process Validation								X								
7.5.4	Customer Property						X	X	X	X				X			
7.5.5	Preservation (Handling, Storage & Deliv.)								X	X							
7.6	Calibration								X	X							
8.1	Measurement & Monitoring Planning						X										X
8.2.1*	Customer Satisfaction*	X															X
8.2.2*	Internal Audits*				X												X
8.2.3	Measurement &Monitoring of Process						X										
8.2.4	Measurement & Monitoring of Product						X										
8.3	Non-Conforming Processes/Products						X	X	X	X							
8.4	Analysis of Data	X	X	X													X
8.5.1*	Continuous Improvement*	X		X													X
8.5.2 & 8.5.3*	Corrective/Preventive Action*		X	X	X		X										X
	Use of NQA Logo	X															X

Note: Please fill in the table including areas/sites/departments/functions visited during the visit.

SYSTEM AUDIT REPORT NUMBER 04/35812/TV02/AS-S03	
SYSTEM AUDIT RECORD	
Auditor(s): Rick Giguere Trudy Keaveney	**Date:** June 22-25, 2004

Clause No.	Record of Details of Audit (names, referenced documents, depts.., etc.)	NC	Obs or OIs
4/5	*See AS 9101 B checklist* INTERVIEWED: DOCUMENTS REVIEWED: OBJECTIVE EVIDENCE SAMPLED:	3	
6	*See AS 9101 B checklist* INTERVIEWED: DOCUMENTS REVIEWED: OBJECTIVE EVIDENCE SAMPLED:		
7	*See AS 9101 B checklist* INTERVIEWED: DOCUMENTS REVIEWED: OBJECTIVE EVIDENCE SAMPLED:	3	1
8	*See AS 9101 B checklist* INTERVIEWED: DOCUMENTS REVIEWED: OBJECTIVE EVIDENCE SAMPLED:	2	

TOTAL	8	1
PAGE 3 OF 4		

SYSTEM AUDIT REPORT NUMBER 04/35812/TV02/AS-S03

NQA National Quality Assurance-USA

Ref No.	Clause No.	NON-CONFORMANCES & OBSERVATIONS/OPPORTUNITIES FOR IMPROVEMENT RAISED	NC/OBS/ OI
1	4.2.3	Test Discrepancy Reports are not completed in a consistent manner.	NC
2	7.4	Qualification criteria, thresholds of performance and consequences of poor performance have not been identified.	NC
3	7.4	Required actions when issued during supplier audits that introduce a potential risk are not identified. Ref: Sierra Lobo NDE Audit item#11, General finding polyolefin and nylon in space flight application, omission of mettallographic inspection in work instructions.	NC
4	8.5.2	Supplier corrective actions do not demonstrate full root cause corrective action anlysis. ref: Sierra Lobo audit finding corrective actions.	NC
5	7.4	Supplier has performed work for the organization since 10/02; audit of supplier for qualification is just being completed. Ref: Sierra Lobo.	NC
6	8.2.2	Reference NQA audit 03/35812/AS-S02, noncompliance item 1. Corrective action for this noncompliance could not be satisfactorily verified at this time. A review of internal audit records reveals that objective evidence is lacking of audits extending to AS 9100 requirements as specified in MPG 1280.6.	NC
7	5.6	MPG 7120.4 Appendix I: PPA Monthly Health Status Report requires that root cause of any yellow or red condition and recovery plan be described. A review of these reports reveals inconsistencies in the reporting of cause analysis and recovery plans in roughly half of the projects/programs reporting.	NC
8	4.3	MPG 8040.1, Configuration Management, MSFC Programs/Projects, Par. 3.4.2 states that Each program and/or project office shall ensure that periodic CM system audits of in-house CM activities be conducted. A review of CM audits reveals that it is CM itself that initiates these audits, and not the program or project office. Certain programs, such as Solar B and Dart, have declined audits.	NC
		(Continued from above)It is not likely that CM audits would be conducted without the initiative of the CM group.	
9	7.5.1	In Bldg. 4619, certain pressure gages were noted with operational check labels on them that had expired due dates. Although these are not calibration labels, there could be some confusion as to their validity with stickers indicating that operational checks are overdue.	OBS

NQA USA Representative Signature and Date:	Company Representative Signature and Date:	Page 4 of 4
6/25/04	for Axel Roth 6/25/04	

SAE Aerospace
An SAE International Group

AEROSPACE STANDARD

SAE AS9101 Technically equivalent to AECMA prEN 9101	REV. B
Issued 2000-09 Revised 2003-03 Superseding AS9101A	

Quality Management Systems Assessment

LICENSE AGREEMENT

The purchase price of this document includes a license to duplicate the forms included within only for the internal use of the organization which purchased the document. Further duplication or licensing is prohibited.

TO PLACE A DOCUMENT ORDER:
Tel: 877-606-7323 (inside USA and Canada)
Tel: 724-776-4970 (outside USA)
Fax: 724-776-0790
Email: custsvc@sae.org
SAE WEB ADDRESS: http://www.sae.org

FOREWORD

In December 1998, the Aerospace Industry has established the International Aerospace Quality Group (IAQG) with the purpose of achieving significant improvements in quality and reductions in cost throughout the value stream.

This organization, with representation from Aerospace companies in Americas, Asia and Europe and sponsored by SAE, SJAC and AECMA has agreed to take responsibility for the technical contents of this standard.

CONTENTS

QUALITY MANAGEMENT SYSTEMS - ASSESSMENT

SECTION 1

* * *

QUALITY MANAGEMENT SYSTEMS ASSESSMENT

1 PURPOSE

The purpose of this document is to define the content and the presentation of the Assessment Report of the section 1 of AS9100.

2 QUALITY SYSTEM ASSESSMENT REPORT CONTENT

The Assessment Report is made up of:

- Page 6 *(required)*
  General Assessment Information
- Page 7 *(required)*
  Assessment Conclusions
- Page 8 *(optional)*
  General Organization Information
- Page 9 *(required)*
  Assessment Result Summary
- Page 10 *(required)*
  Assessment Scoring
- Page 11
  Corrective Action Request (when required)
- Page 12
  List of Recommendations/Observations/Comments
- **Appendix A**
  Quality System Questionnaire relative to the section 1 of AS9100

ASSESSMENT REPORT	*Assessing company logo*

GENERAL ASSESSMENT INFORMATION

1 Organization & Work Address

Company Name: NASA - MSFC Subsidiary of: Organization Identification: Assessed Site Address: MARSHALL SPACE FLIGHT CENTER, AL 35812 Main activities: Product Types or Codes:	Tel Number: (256) 544-8361 Fax Number: (256) 544-4155 e-mail: don.miller@msfc.nasa.gov CAGE code: 21, 33, 34 Assessment Representative & Title: Axel Roth - Mgmt Rep Quality Manager Representative & Title: Axel Roth - Mgmt Rep

2 ISO Registration

[✓] ISO Registered [✓] ISO Standard / Revision 9001: 2000 [✓] Aerospace Standard / Revision AS 9100	Registrar Name: NQA-USA Expiration Date (If applicable):

3 Assessment Team

Lead Assessor Name: [✓] Certified Auditor – Type & No. A03158 Q03158 [ ] Qualified Auditor	Other Assessor Team Members: TRUDY KEAVENEY

4 Assessment Dates: JUNE 22-25, 2004

5 Assessment Scope

[✓] Total facility assessed [ ] Initial assessment [ ] Partial facility assessed [ ] Re-assessment [ ] Other: [ ] Activity assessed:	[✓] All 9100 elements assessed [ ] Partial 9100 elements assessed Elements not assessed:

6 Assessment Disposition	**7 Scoring**
[ ] Conforming [X] Conforming with minor (mi) corrective action [ ] Non conforming with Major (MA) corrective action	Scoring result: 91

8 Assessment Approval

Assessing Company	Date	Lead Assessor Name	Signature
NQA-USA	June 25, 2004	Rick Giguere	Richard Giguere

Distribution Agreement

This Assessment Report is the property of the assessed Organization and the assessing Company. Distribution to other companies or individuals is authorized only after written agreement of the assessed Organization and of the assessing Company.

To that end, a signature below by an Authorized Representative of the assessing company indicates that this report may be copied by the organization for other customers.

If copied, the report must be disclosed in full including findings and any corrective actions.

Authorized Representative Assessing Company Name: Rick Giguere Signature: Richard Giguere Date: 6/25/04

ASSESSMENT REPORT	*Assessing company logo*

ASSESSMENT CONCLUSIONS

General comments about the organization and the quality system of the assessed organization:

See audit report

Strong points:

- Environmental Engineering Dept - 2004 Implementation Plan provides clear indication of objectives flow down from NASA.

Improvement Opportunities:

ASSESSMENT REPORT	*Assessing company logo*

GENERAL ORGANIZATION INFORMATION

1 Legal and Financial Aspects

- ☐ Date of Formation:
- ☐ Legal Status:
- ☐ Capital:
- ☐ Other Data:

	Third Prior Financial Year ( )	Second Prior Financial Year ( )	First Prior Financial Year ( )	**Current Financial Year ( )**
Sales				
Earnings				
Earnings used for Re-Investment				
Workforce				

2 Turnover breakdown and main Customers

Activities	Main Customers	Sales Percentage
Aircraft, Space and Defense Industry		
Other Activity (be specific)		

3 Clearances or Approvals granted by Authorities

Name of the Authority	Types and References	End of Validity (date)

ASSESSMENT REPORT	*Assessing company logo*

ASSESSMENT RESULT SUMMARY

Organization : NASA

Elements* (AS9100 – Section 1)	**Result** S	Ma	mi	N/A	**Observation / Corrective Action Request Number (MA/mi)**
4 - Quality Management System					
4.1 General requirements					
4.2 Documentation requirements			1		
4.3 Configuration Management			1		
5 - Management responsibility					
5.1 Management commitment					
5.2 Customer focus					
5.3 Quality policy					
5.4 Planning					
5.5 Responsibility, authority and communication					
5.6 Management review			1		
6 - Resource management					
6.1 Provision of resources					
6.2 Human resources					
6.3 Infrastructure					
6.4 Work environment					
7 - Product realization					
7.1 Planning of product realization					
7.2 Customer-related processes					
7.3 Design and development					
7.4 Purchasing			3		
7.5 Production and service provision					7.5.1 obs. See Noncon report.
7.6 Control of monitoring and measuring devices					
8 - Measurement, analysis and improvement					
8.1 General					
8.2 Monitoring and measurement			1		
8.3 Control of nonconforming product					
8.4 Analysis of data					
8.5 Improvement			1		
Assessed Organization: NASA			8		Assessing Company: NQA - USA
Rep's name: Axel Roth	**Results**				Lead Assessor Name: Rick Giguere
Signature: DJMillen for Axel Roth					Signature:

* For each element, cross results of assessment: "S" for Satisfactory, "Ma" for major corrective action, "mi" for minor or "N/A" for non applicable

ASSESSMENT SCORING

(Member logo)

Organization :

	SCORING CHART	Result: Major CAR or minor CAR on Key requirement – Multiple findings	Major CAR or minor CAR on Key requirement – Single finding	Minor CAR on non Key requirement – Multiple findings	Minor CAR on non Key requirement – Single finding	NO CAR	RESULT
4	**Quality management system**					**(100)**	
4.1	General requirements	0	10	25	40	50	50
4.2 & 4.3	Documentation requirements & Configuration management	0	10	(25)	40	50	25
5	**Management responsibility**					**(150)**	
5.1	Management commitment						
5.2	Customer focus	0	5	15	20	30	30
5.3	Quality policy						
5.4	Planning	0	10	20	30	40	40
5.5	Responsibility, authority and communication	0	5	15	20	30	30
5.6	Management review	0	10	25	(40)	50	40
6	**Resource Management**					**(100)**	
6.1	Provision of resources	0	10	25	40	50	50
6.2	Human resources						
6.3	Infrastructure	0	10	25	40	50	50
6.4	Work environment						
7	**Product realization**					**(450)**	
7.1	Planning of product realization	0	5	15	20	30	30
7.2	Customer related processes	0	10	30	50	60	60
7.3	Design and development						
7.3.1	*D& D Planning*	0	5	15	20	30	30
7.3.2-3-4	*Inputs, outputs & review*	0	5	15	20	30	30
7.3.5-6	*D&D verification & validation*	0	5	15	20	30	30
7.3.7	*Control of design and development changes*	0	5	15	20	30	30
7.4	Purchasing	0	10	(30)	50	60	30
7.5	Product and service provision						
7.5.1	*Control of production and service provision*	0	10	25	40	50	50
7.5.2	*Validation of processes for production and service provision*	0	10	20	30	40	40
7.5.3	*Identification and traceability*	0	10	20	30	40	40
7.5.4-5	*Customer property & preservation of product*	0	5	15	20	30	30
7.6	Control of monitoring and measuring device	0	5	10	15	20	20
8	**Measurement analysis and improvement**					**(200)**	
8.1	General	0	5	10	15	20	20
8.2	Monitoring and measurement						
8.2.1	*Customer satisfaction*	0	5	10	15	20	20
8.2.2	*Internal audit*	0	5	15	(20)	30	20
8.2.3	*Monitoring and measurement of processes*	0	5	15	20	30	30
8.2.4	*Monitoring and measurement of product*	0	5	15	20	30	30
8.3	Control of nonconforming product	0	5	15	20	30	30
8.4	Analysis of Data	0	5	10	15	20	20
8.5	Improvement	0	5	10	(15)	20	15
						TOTAL	880 (1) or 1000	910
						SCORE	910 / 100	91

The assessed Organization agrees on the Quality System scoring and Corrective Action requests		
Organization Representative : Don Miller for Axel Roth	Signature : D Miller for Axel Roth	Date : 6/25/04

(1) When 7.3 is not assessed : SCORE = RESULT X 100 / 880

CORRECTIVE ACTION REQUEST (C.A.R.)	*Assessing company logo*

Organization: Site:	Identification C.A.R. No.: Date issued:
Reference Standard:	Referenced Standard Element concerned:

Criticality Ma / mi	Non-Conformance Description

Assessor Name:	Assessor Signature:

Assessed Organization to complete the Corrective Action Request with root cause analysis, corrective action and planned completion date of corrective action, and return to the assessing Company by due date.	Due date:

Action No.:	Root Cause:	
Action No.:	Corrective Action:	Planned completion date of Corrective Action:

Organization Representative Name:	Signature:	Current date:

Verification of the implementation of the completed Corrective Action by the Assessed Organization

Organization Representative Name:	Signature:	Current date:

Verification of the implementation of the completed Corrective Action to be filled out by the Assessing Company

Verification date :	Accepted: Yes ☐ No ☐	Assessor Name :	Assessor Signature :

List of Recommendations/Observations/Comments

Assessing company logo

Organization : NASA	Audit report number 04/35818/IV02/AS-S03
Site : Huntsville	Issued date : 6/25/04

Item Number	Section	Description
		See Nonconformance Report.

Lead Assessor Name:	Signature:
Rick Giguere	

*S : Satisfactory – **CAR** : Corrective action required – **Ma** : Major corrective action – **mi** : Minor corrective action*
*N/A : Not applicable - N/E: Not evaluated - **P** : Product - **M** : Management*

APPENDIX A
AS9101

* * *

QUALITY SYSTEM QUESTIONNAIRE

1. PURPOSE

The purpose of this document is to present the questionnaire to be used during the "on site" quality system assessment of Organizations in order to ensure common practices for these assessments. This questionnaire is relative to the section 1 of AS9100.

2. USE OF THE QUESTIONNAIRE

The use of this questionnaire is mandatory and will be a part of the Assessment Report. The questionnaire is used to evaluate AS9100 standard, section 1.

The audit is undertaken by review against the requirements of the questionnaire and the findings are recorded as appropriate by annotation of respective columns,

- Satisfactory (S)
- Not applicable (N/A) the reason shall be documented in the bottom of the page
- Not evaluated (N/E)
- Corrective Action Request (CAR) Major (Ma) or Minor (mi.) finding:

The CAR number shall be referenced in the column "CAR number"
The category Ma for Major CAR or mi for Minor CAR shall be included in this column also.

Additional information on questionnaire

Key Requirements: Some requirements are deemed to be very significant and are so identified by the presence of 'P' or 'M' against the specific section or question within the questionnaire,

"P" direct link with product

"M" direct link with Management

The extent of Key Requirement applicability is determined by the location of the 'M' or 'P'. In the example below all of question 14 is considered as a key requirement.

14	Does the output from the management review include any decisions and actions related to :	M				
	a) Improvement of the effectiveness of the quality management system and its processes ?					
	b) Improvement of product related to customer requirements ? and					
	c) Resource needs ?					

In the second example below only part of question 03, i.e. d) is considered Key Requirement.

03	In planning product realization, does the organization determine the following, as appropriate :					
	a) Quality objectives and requirements for the product ?					
	b) The need to establish processes, documents, and provide resources specific to the product ?					
	c) Required verification, validation, monitoring, inspection and test activities specific to the product and the criteria for product acceptance ?					
	d) Records needed to provide evidence that the realization processes and resulting product meet requirements (see 4.2.4) ?	P				
	e) The identification of resources to support operation and maintenance of the product ?					

Guidance notes: Certain questions will have a numeric reference that refers to additional guidance notes which are detailed within the 'Guidance notes' section located after the questions on each page. The guidance notes provide the Auditor with further insight on type of objective evidence and/or review expectations etc. In the example below, note (1) refers the auditor to additional notes pertaining to question 1 part a).

48 Does the analysis of data provide information relating to : a) Customer satisfaction (see 8.2.1) (1) ? b) Conformity to product requirements (see 7.2.1) e ? c) Characteristics and trends of processes and products including opportunities for preventive action ? And d) Organizations ?					

Guidance Note

1) Give examples and check how the organization measures the effectiveness.

References : When a reference (e.g. 4.1) is added to a question, It is linked to the appropriate chapter (e.g. 4.1) of AS9100.

Objective evidence assessed / Observations / Comments / N/A explanation
Record the objective evidence reviewed during the assessment or reason for not applicable.

Non-conformities :

Major : The absence of, or total breakdown of a management element specified in the 9100 standard or any non-conformities where the effect is judged to be detrimental to the integrity of the product or service.

Minor : A single system failure or lapse in conformance with a procedure relating to the 9100 standard.

Note : A number of minor non-conformities against one requirement can represent a total breakdown of the system and this can be considered as a major non-conformity

3. USE OF THE ASSESSMENT SCORING CHART

Following completion of each chapter of the Quality System Questionnaire the nomenclature Assessment Scoring chart can now be completed.

The findings of each section and sub-section of the completed Quality System Questionnaire are reviewed and the Assessment Scoring sheet completed as follows.

- If, multiple findings (i.e. greater than 1) with Major (Ma) Corrective Action Request (CAR) or minor (mi) CAR on Key requirement in a section, e.g. 4.1 General Requirements then score in Major CAR or minor CAR on Key Requirement (i.e. any questions with 'M' or 'P' indicator) "Multiple findings" column (result = 0), or

- If, single finding with Major (Ma) CAR or minor (mi) CAR on key requirements in a section, e.g. 4.1 General Requirements then score in Major CAR or minor CAR on Key Requirement "Single finding" column (result =10), or

- If, multiple findings on non Key requirement (i.e. greater than 1) with Minor (mi) (CAR) in a section, e.g. 4.1 General Requirements then score in Minor CAR on non Key requirement "Multiple findings" column (result=25), or

- If, single finding on non Key requirement with Minor (mi) CAR in a section, e.g. 4.1 General Requirements then score in Minor CAR on non Key requirement "Single findings" column (result = 40), or
- If, no CAR in a section, e.g. 4.1 General Requirements then score in "NO CAR" column (result=50)
- When a single finding occurred on several questions affecting the same section of the scoring table (e.g. 4.2 & 4.3 or 5.1-5.2-5.3), then score as "multiple findings".

Further notes on scoring

The above review criteria should be considered sequentially.

Maximum audit total can be,

1000, where audit review comprises whole Quality System Questionnaire or,

880, where audit review comprises Quality System Questionnaire less Design and Development. In this case, the final score = $\frac{\text{TOTAL X 100}}{880}$

If a complete section line of the score sheet has not been assessed (N/A or N/E) the score will be calculated as follow:

$$\text{Score} = \frac{\text{TOTAL x 100}}{\text{Sum of maximum possible score}}$$

The higher the score the greater the level of compliance acknowledged by the audit activity.

Summary

QUALITY SYSTEM QUESTIONNAIRE

ASSESSMENT QUESTIONS	KEY Requirements	S	CAR Number Ma or mi	N/A	N/E
4 QUALITY MANAGEMENT SYSTEM					
4.1 General requirements					
01 Has the organization established, documented, implemented and maintained a quality management system and continually improve its effectiveness in accordance with the requirements of this International Standard ?		✓			
02 Does the organization : a) identify the processes needed for the quality management system and their application throughout the organization (1) ? b) determine the sequence and interaction of these processes (1) ? c) determine criteria and methods needed to ensure that both the operation and control of these processes are effective ? d) ensure the availability of resources and information necessary to support the operation and monitoring of these processes ? e) monitor, measure and analyze these processes ? and f) implement actions necessary to achieve planned results and continual improvement of these processes ?		✓			
03 Are these processes managed by the organization in accordance with the requirements of this International Standard ?		✓			
04 Where an organization chooses to outsource any process that affects product conformity with requirements, does the organization ensure control over such processes ?	P	✓			
05 Is the control of such outsource processes identified within the quality management system ?		✓			

Note : Processes needed for the quality management system referred to above should include processes for management, provision, product realization and measurement.

Guidance Note

1) Main process formally identified e.g. : list, flow diagram, etc.

Objective evidence assessed / Observations / Comments / N/A explanation

*S: Satisfactory - **CAR**: Corrective action required - **Ma**: Major corrective action - **mi**: Minor corrective action*
*N/A: Not applicable - **N/E**: Not evaluated - **P**: Product - **M**: Management*

QUALITY SYSTEM QUESTIONNAIRE

ASSESSMENT QUESTIONS	KEY Requirements	S	CAR Number Ma or mi	N/A	N/E

4.2 Documentation requirements

4.2.1 General

06 Does the quality management system documentation include : a) documented statements of a quality policy and quality objectives ? b) a quality manual ? c) documented procedures required by this International Standard ? d) documents needed by the organization to ensure the effective planning, operation and control of its processes ? e) records required by this International Standard (see 4.2.4) ? and ***f) quality system requirements imposed by the applicable Regulatory Authorities ?***		✓			
07 Does the organization ensure that personnel have access to quality management system documentation and are aware of relevant procedures ?		✓			
08 Do Customer and/or regulatory authority representatives have access to quality management system documentation ?		✓			

4.2.2 Quality manual

MPD 1280.1 Rev M

09 Has the organization established and maintained a quality manual that includes (1) : a) the scope of the quality management system, including details of, and justification for, any exclusions ? b) the documented procedures established for the quality management system, or reference to them, and ***when referencing the documented procedures, is the relationship between the requirements of this International Standard and the documented procedures clearly shown (2) ?*** c) a description of the interaction between the processes of the quality management system ?		✓			

Note 1 : Where the term "documented procedure" appears within this International Standard, this means that the procedure is established, documented, implemented and maintained.
Note 2 : The extent of the quality management system documentation can differ from one organization to another due to
a) the size of organization and type of activities,
b) the complexity of processes and their interactions, and
c) the competence of personnel

Guidance Notes

1) Quality manual reference and issue
2) Check the procedure list

Objective evidence assessed / Observations / Comments / N/A explanation

Reviewed Mgmt Review meeting minutes
Reviewed change to Manual over triennial period
Sampled access to documents at various segment of audit.
procedures - on-line.

*S: Satisfactory - **CAR**: Corrective action required – **Ma**: Major corrective action – **mi**: Minor corrective action*
N/A: Not applicable - N/E: Not evaluated - P: Product - M: Management

QUALITY SYSTEM QUESTIONNAIRE

ASSESSMENT QUESTIONS	KEY Requirements	S	CAR Number Ma or mi	N/A	N/E
4.2 Documentation requirements (continued)					
4.2.3 Control of documents					
10 Are the documents required by the quality management system controlled ?	M	✓			
11 Are records controlled according to the requirements given in 4.2.4 ?		✓			
12 Has a documented procedure been established to define the controls needed to : a) approve documents for adequacy prior to issue ? b) review and update as necessary and re-approve documents ? c) ensure that changes and the current revision status of documents are identified ? d) ensure that relevant versions of applicable documents are available at points of use ? e) ensure that documents remain legible and readily identifiable ? f) ensure that documents of external origin are identified and their distribution controlled ? and g) prevent the unintended use of obsolete documents, and to apply suitable identification to them if they are retained for any purpose ?		✓			
13 Does the organization coordinate document changes with customers and/or regulatory authorities in accordance with contract or regulatory requirements ?		✓			
4.2.4 Control of records					
14 Are records established and maintained to provide evidence of conformity to requirements and of the effective operation of the quality management system ?		✓			
15 Do records remain legible, readily identifiable and retrievable (1) ?		✓			
16 Has a documented procedure been established to define the controls needed for the identification, storage, protection, retrieval, retention time and disposition of records ?		✓			
17 Does the documented procedure define the method for controlling records that are created by and/or retained by suppliers ?		✓			
18 Are records available for review by customers and regulatory authorities in accordance with contract or regulatory requirements ?		✓			
4.3 Configuration management MWI 8040.2 RevC					
19 Has the organization established, documented and maintained a configuration management process appropriate to the product ?	P		~~NI~~ 8 NC		

Guidance Note

1) List records reviewed

Objective evidence assessed / Observations / Comments / N/A explanation

SSCN 8479, 3578
CCB Code - Effectivity Sheet
CPTAS Abbreviated Master Report per MWI 8040.2
data entered into CPTAS. - MP 00065

Form 2327 March 98
Form 2896 May 02
Form 3418 Nov 01

Solar B - no config Mgmt offic - neither contractors pa 8040.1 RevC pa 3.4-2
Dart - " " "

*S: Satisfactory - **CAR**: Corrective action required – **Ma**: Major corrective action – **mi**: Minor corrective action*
N/A: Not applicable - **N/E**: Not evaluated - **P**: Product - **M**: Management

CM audit dated, 12/8/03 of (OSP)X-3720-

			Audit Rpt
Config Audits	MSSR-1	7/03	(03-)
	X-37	11/03	(03-)
	NGLT-REP	12/03	(04-001)
	(PTIP)	2/04	(04-005)
	ISS NODE	4/04	(04-010)

X-37 Project - Request to perform audit (memo) 10/23/03
Report of Audit results 12/8/03

4.3

Lisa Cooper

NODE 2/3 Project Office

CM Plan SSNP8 NC-0015 Rev A

Level III CCB
Membership of CCB – Charter letter – approved by proj Mgr

Ch. Request ISS - SSCN 004652 ⇒ change evaluation →

PIRN - Prelim Interface Rev. Notice - PIRN 50314-NA-0005A
IFM # NDO2-0017 - Approves PIRN

IRN 50314-11, 12 Approved

Directive ⇒ OL 4 of 6 CCB members Sign w/ proj. Mgr. concurrence
chairperson

QUALITY SYSTEM QUESTIONNAIRE

ASSESSMENT QUESTIONS	KEY Requirements	S	CAR Number Ma or mi	N/A	N/E

4.2 Documentation requirements (continued)

4.2.3 Control of documents TD 70-002 By Directorate					
10 Are the documents required by the quality management system controlled ?	M	S			
11 Are records controlled according to the requirements given in 4.2.4 ? yes TDR records incomplete		S	Ma Mi		
12 Has a documented procedure been established to define the controls needed to :		S			
a) approve documents for adequacy prior to issue ? yes					
b) review and update as necessary and re-approve documents ? yes doc control reps					
c) ensure that changes and the current revision status of documents are identified ?					
d) ensure that relevant versions of applicable documents are available at points of use ? electronic files					
e) ensure that documents remain legible and readily identifiable ? yes					
f) ensure that documents of external origin are identified and their distribution controlled ? and yes					
g) prevent the unintended use of obsolete documents, and to apply suitable identification to them if they are retained for any purpose ? yes		S			
13 Does the organization coordinate document changes with customers and/or regulatory authorities in accordance with contract or regulatory requirements ? as required		S			
4.2.4 Control of records					
14 Are records established and maintained to provide evidence of conformity to requirements and of the effective operation of the quality management system ? yes		S			
15 Do records remain legible, readily identifiable and retrievable (1) ?		S			
16 Has a documented procedure been established to define the controls needed for the identification, storage, protection, retrieval, retention time and disposition of records ? yes		S			
17 Does the documented procedure define the method for controlling records that are created by and/or retained by suppliers ? yes		S			
18 Are records available for review by customers and regulatory authorities in accordance with contract or regulatory requirements ? yes		S			
4.3 Configuration management					
19 Has the organization established, documented and maintained a configuration management process appropriate to the product ?	P				✓

Guidance Note

1) List records reviewed Contracts, Purchase Orders, Test, COFR, TDR, DR, Material Review Board

Objective evidence assessed / Observations / Comments / N/A explanation

Electronic Procedures & work instructions, graded on-line System Reviewed on-line System verified release and revisions SPICE 001

* 4.2.3 TDR not consistently filled out correctly Review Panel Reports / 4.2.4 By SD 40-OWI-003 By MFSC Plan 305-2 Integration minutes, Integration Review Action Closures Records custodian

*S: Satisfactory - **CAR:** Corrective action required – **Ma:** Major corrective action – **mi:** Minor corrective action*
N/A: Not applicable - **N/E:** Not evaluated - **P:** Product - **M:** Management

QUALITY SYSTEM QUESTIONNAIRE

ASSESSMENT QUESTIONS	KEY Requirements	S	CAR Number Ma or mi	N/A	N/E
5 MANAGEMENT RESPONSIBILITY					
5.1 Management commitment					
01 Has Top management provided evidence of its commitment to the development and implementation of the quality management system and continually improving its effectiveness by (1) : a) communicating to the organization the importance of meeting customer as well as statutory and regulatory requirements ? b) establishing the quality policy ? c) ensuring that quality objectives are established ? d) conducting management reviews ? And e) ensuring the availability of resources ?	M				✓
5.2 Customer focus					
02 Has Top management ensured that customer requirements are determined and are met with the aim of enhancing customer satisfaction (see 7.2.1 and 8.2.1) ?					✓
5.3 Quality policy					
03 Has Top management ensured that the quality policy : a) is appropriate to the purpose of the organization ? b) includes a commitment to comply with requirements and continually improve the effectiveness of the quality management system ? c) provides a framework for establishing and reviewing quality objectives ? d) is communicated and understood within the organization (2) ? and e) is reviewed for continuing suitability ?		✓			✓
5.4 Planning					
5.4.1 Quality objectives					
04 Has Top management ensured that quality objectives, including those needed to meet requirements for product [see 7.1 a)] are established at relevant functions and levels within the organization (3) ?		✓			
05 Are the quality objectives measurable and consistent with the quality policy ?	M	✓			
5.4.2 Quality management system planning					
06 Has Top management ensured that : a) the planning of the quality management system is carried out in order to meet the requirements (see 4.1), as well as the quality objectives ? and b) the integrity of the quality management system is maintained when changes to the quality management system are planned and implemented ?		✓			

5.1/5.2/5.3 5 top mgmt interviews conducted during last audit

Guidance Notes

1) Evidence of management commitment
2) Identify and records method of communication
3) Review objectives and status of their implementation

Objective evidence assessed / Observations / Comments / N/A explanation

examined policy and internal review of policy for adequacy
Reviewed objective and performance against the same as evidenced in
Balanced Scorecard

S: Satisfactory - CAR: Corrective action required – Ma: Major corrective action – mi: Minor corrective action
N/A: Not applicable - N/E: Not evaluated - P: Product - M: Management

QUALITY SYSTEM QUESTIONNAIRE

ASSESSMENT QUESTIONS	KEY Requirements	S	CAR Number Ma or mi	N/A	N/E
5.5 Responsibility, authority and communication					
5.5.1 Responsibility and authority					
07 Has Top management ensured that the responsibilities and authorities are defined and communicated within the organization (1) ?		✓			
5.5.2 Management representative					
08 Has Top management appointed a member of management who, irrespective of other responsibilities, has responsibility and authority that includes : a) ensuring that processes needed for the quality management system are established, implemented and maintained ? b) reporting to top management on the performance of the quality management system and any need for improvement ? c) ensuring the promotion of awareness of customer requirements throughout the organization ? and ***d) the organizational freedom to resolve matters pertaining to quality ?***	M	✓			
5.5.3 Internal communication					
09 Has Top management ensured that appropriate communication processes are established within the organization and that communication takes place regarding the effectiveness of the quality management system ?		✓			

Guidance Note

1) Identify and records method of communication within the organization

Objective evidence assessed / Observations / Comments / N/A explanation

validated responsibilities + authorities - particularly as it related to CCB membership, MRB membership, approval of documents

- Interviewed Axel Roth, Mgt Rep. as part of 5.6.
- Observed Internal Communication at various point of audit

*S: Satisfactory - **CAR:** Corrective action required – **Ma:** Major corrective action – **mi:** Minor corrective action*
*N/A: Not applicable - **N/E:** Not evaluated - **P:** Product - **M:** Management*

HPG - 7120.4

5.6 HSC/PMC - Program Management Council
8.4 project/program evaluation . (Red, yellow, green)
8.5.3 Stop light charts by project + pgm
- Green, yellow, Red -

7120.4 Part I.1.1 . require Cause + C/A for reds/yellows - Not done on consistent basis
yellow/red require explanation of problem and action plan.

QUALITY SYSTEM QUESTIONNAIRE

ASSESSMENT QUESTIONS	KEY Requirements	S	CAR Number Ma or mi	N/A	N/E
5.6 Management review					
5.6.1 General					
10 Has Top management reviewed the organization's quality management system, at planned intervals, to ensure its continuing suitability, adequacy and effectiveness (1) ?		✓			
11 Does this review include assessing opportunities for improvement and the need for changes to the quality management system, including the quality policy and quality objectives ?		/			
12 Are records from management reviews maintained (see 4.2.4) ?		/			
5.6.2 Review input					
13 Does the input to management review include information on (2) : a) results of audits? b) customer feedback? c) process performance and product conformity? d) status of preventive and corrective actions? e) follow-up actions from previous management reviews? f) changes that could affect the quality management system? And g) recommendations for improvement?	M	/			
5.6.3 Review output					
14 Does the output from the management review include any decisions and actions related to (2) : d) improvement of the effectiveness of the quality management system and its processes? e) improvement of product related to customer requirements? And f) resource needs?	M	/ PG	NC		

Guidance Notes

1) Records management review frequency and functions involved (e.g : quality, production, etc.)
2) Verify the availability of input / output data such as: statistical data; graphics; summary tables; reports; etc.

Objective evidence assessed / Observations / Comments / N/A explanation

5/25/04 - Mgmt Review - Axel Roth

Success Stories -
- MQC actions - tracking actions taken
- Customer feedback reporting -
- Objectives - Continued Learning
  - Safety
- MQC - Process Perf - Prod. Conf.
- Int Audit
- CA/PA Program - RCAR
- changes that could effect
- Objectives

Dennis Davis - Safety, HTM, QDSD 8.4

5/26 Report for FY 04 8.5.3
- Lost Time Rate
- Osha Recordable
- all Cases
- unsafe Acts

Corrective actions - Status

Safety Data -

PQM mgmt council

See adjacent page

*S: Satisfactory - **CAR**: Corrective action required – **Ma**: Major corrective action – **mi**: Minor corrective action*
*N/A: Not applicable - **N/E**: Not evaluated - **P**: Product - **M**: Management*

Chris Smith - Truck Driver - CDL Class B

	Forklift		
Don Walton -	cert exp 4/06	cl. 1, 5	Active
David Green -	exp 4/05	class 1-7	Active
Rick Fletcher -	exp 7/04	Cl 1, 5	Active
Ben Franklin -	↓ 7/04	"	"
John Harris -	Recq	Forklift	7/04	Active
Cedric Corn	Recq	"	1/07	Active

Aerospace Engineer position description #3257S - Jim Lindsay

QUALITY SYSTEM QUESTIONNAIRE

ASSESSMENT QUESTIONS	KEY Requirements	S	CAR Number Ma or mi	N/A	N/E
6. RESOURCE MANAGEMENT					
6.1 Provision of resources					
01 Has the organization determined and provided the resources needed: a) to implement and maintain the quality management system and continually improve its effectiveness ? And b) to enhance customer satisfaction by meeting customer requirements ?		✓			
6.2 Human resources					
6.2.1 General					
02 Are personnel performing work affecting product quality competent on the basis of appropriate education, training, skills and experience (1) ?		✓			
6.2.2 Competence, awareness and training					
03 Does the organization : a) determine the necessary competence for personnel performing work affecting product quality (2) ? b) provide training or take other actions to satisfy these needs ? c) Evaluate the effectiveness of the actions taken ? d) ensure that its personnel are aware of the relevance and importance of their activities and how they contribute to the achievement of the quality objectives ? e) maintain appropriate records of education, training, skills and experience (see 4.2.4) (3) ?	P	✓			
6.3 Infrastructure					
04 Does the organization determine, provide and maintain the infrastructure needed to achieve conformity to product requirements ? Infrastructure includes, as applicable : a) buildings, workspace and associated utilities ? b) process equipment (both hardware and software) ? And c) supporting services (such as transport or communication) ?		✓			
6.4 Work environment					
05 Does the organization determine and manage the work environment needed to achieve conformity to product requirements ?	P	✓			

Note : Factors that may affect the conformity of the product include temperature, humidity, lighting, cleanliness, protection from electrostatic discharge, etc.

Guidance Notes

1) Review training Records and Plan (status of the current year and of the previous year)
2) Give examples of methods used to determine competence (e.g.: competence matrix, multiskill, ...)
3) Review training certificates for the certified personnel and training records (internal and external training courses)

Objective evidence assessed / Observations / Comments / N/A explanation

Keith Hesson - engineer (MELPHI) Lead Thermal Eng.

D. Clark - 7/2 - 6/3

IDP - Ind. Dev. Plan - 40 - 80 hrs training -

Observed Infrastructure management - posting of Bldg Managers.

Contractor performance for facilities

*S: Satisfactory - **CAR**: Corrective action required – **Ma**: Major corrective action – **mi**: Minor corrective action*
*N/A: Not applicable - **N/E**: Not evaluated - **P**: Product - **M**: Management*

QUALITY SYSTEM QUESTIONNAIRE

ASSESSMENT QUESTIONS	KEY Requirements	S	CAR Number Ma or mi	N/A	N/E
6. RESOURCE MANAGEMENT					
6.1 Provision of resources					
01 Has the organization determined and provided the resources needed: a) to implement and maintain the quality management system and continually improve its effectiveness ? And b) to enhance customer satisfaction by meeting customer requirements ?					✓ ✓
6.2 Human resources					
6.2.1 General					
02 Are personnel performing work affecting product quality competent on the basis of appropriate education, training, skills and experience (1) ? Job description, baselines tayored to meet program requirements		S			
6.2.2 Competence, awareness and training					
03 Does the organization : a) determine the necessary competence for personnel performing work affecting product quality (2) ? performance appraisals In job description, Core competencies b) provide training or take other actions to satisfy these needs ? – IT Security training, Sexual Harassment, ethics, Cultural Diversity, Safety and job related c) Evaluate the effectiveness of the actions taken ? – d) ensure that its personnel are aware of the relevance and importance of their activities and how they contribute to the achievement of the quality objectives ? – SD, e) maintain appropriate records of education, training, skills and experience (see 4.2.4) (3) ? confirmed	P	S S			
6.3 Infrastructure Facilities dept					
04 Does the organization determine, provide and maintain the infrastructure needed to achieve conformity to product requirements ? Infrastructure includes, as applicable : a) buildings, workspace and associated utilities ? – dept services b) process equipment (both hardware and software) ? And – move group c) supporting services (such as transport or communication) ? In place including taxi, courier on site		S			
6.4 Work environment					
05 Does the organization determine and manage the work environment needed to achieve conformity to product requirements ? Appropriate to work	P	S			

Note : Factors that may affect the conformity of the product include temperature, humidity, lighting, cleanliness, protection from electrostatic discharge, etc.

Guidance Notes

1) Review training Records and Plan (status of the current year and of the previous year)– Reviewed records, rosters
2) Give examples of methods used to determine competence (e.g.: competence matrix, multiskill, ...) performance reviews
3) Review training certificates for the certified personnel and training records (internal and external training courses) reviewed

Objective evidence assessed / Observations / Comments / N/A explanation

Reviewed Processes for performance evaluation, Directorate records of training, Process for identifying skill sets, Interface with facilities management, Directorate audits of work environment, JHR Safety and resource needs.

*S: Satisfactory - **CAR:** Corrective action required – **Ma:** Major corrective action – **mi:** Minor corrective action*
*N/A: Not applicable - **N/E:** Not evaluated - **P:** Product - **M:** Management*

QUALITY SYSTEM QUESTIONNAIRE

ASSESSMENT QUESTIONS	KEY Requirements	S	CAR Number Ma or mi	N/A	N/E
7. PRODUCT REALIZATION					
7.1 Planning of product realization					
01 Does the organization plan and develop the processes needed for product realization ? (see 4.1) yes		S			
02 Is planning of product realization consistent with the requirements of the other processes of the quality management system (see 4.1) ?		S			
03 In planning product realization, does the organization determine the following, as appropriate :		S			
a) quality objectives and requirements for the product ?					
b) the need to establish processes, documents, and provide resources specific to the product ?					
c) required verification, validation, monitoring, inspection and test activities specific to the product and the criteria for product acceptance ?					
d) records needed to provide evidence that the realization processes and resulting product meet requirements (see 4.2.4) ?	P				
e) ***the identification of resources to support operation and maintenance of the product ?***		S			
04 Is the output of this planning in a form suitable for the organization's method of operations?		S			

Objective evidence assessed / Observations / Comments / N/A explanation

MSG - Submits payloads integration and operations Service Integration Process document. MSFC Plan 3052 Technical Interchange Meeting, IR data Collection. Integration data, Interface Control document. Integration review Command and data, Payload Library Input. Flight Certification process, Certification Flight Readiness Review. MSFC SP 5294, ref table E-1 COFR: launch, on-orbit, return. Endorsement table, Table C-1 COFR payloads office endorsement Content. HW & SW ICDs, payload verification plan Crew operating Procedure, Safety Process, On-Orbit crew Procedures and/or Ground, Schedule

*S: Satisfactory - **CAR:** Corrective action required – **Ma:** Major corrective action – **mi:** Minor corrective action*
*N/A: Not applicable - **N/E:** Not evaluated - **P:** Product - **M:** Management*

QUALITY SYSTEM QUESTIONNAIRE

ASSESSMENT QUESTIONS	KEY Requirements	S	CAR Number Ma or mi	N/A	N/E
7.2 Customer-related processes					
7.2.1 Determination of requirements related to the product					
05 Does the organization determine : a) requirements specified by the customer, including the requirements for delivery and post-delivery activities ? b) requirements not stated by the customer but necessary for specified or intended use, where known ? c) statutory and regulatory requirements related to the product ? and d) any additional requirements determined by the organization ?	M	✓			
7.2.2 Review of requirements related to the product					
06 Does the organization review the requirements related to the product ?		✓			
07 Is the review conducted prior to the organization's commitment to supply a product to the customer (e.g. submission of tenders, acceptance of contracts or orders, acceptance of changes to contracts or orders) and does it ensure that (1) : a) product requirements are defined ? b) contract or order requirements differing from those previously expressed are resolved ? c) the organization has the ability to meet the defined requirements ? ***And*** ***d) risks (e.g., new technology, short delivery time scale) have been evaluated ?***	P	✓			
08 Are records of the results of the review and actions arising from the review maintained (see 4.2.4) (2) ?		✓			
09 Where the customer provides no documented statement of requirement, are the customer requirements confirmed by the organization before acceptance ?		✓			
10 Where product requirements are changed, does the organization ensure that relevant documents are amended and that relevant personnel are made aware of the changed requirements ?	P	✓			

Note : In some situations, such as internet sales, a formal review is impractical for each order. Instead the review can cover the relevant product information such as catalogues or advertising material.

7.2.3 Customer communication					
11 Does the organization determine and implement effective arrangements for communicating with customers in relation to : a) product information ? b) enquiries, contracts or order handling, including amendments ? and c) customer feedback, including customer complaints ?		✓			

Guidance Notes

1) Check that all affected functions are involved in the review
2) Give examples

Objective evidence assessed / Observations / Comments / N/A explanation

Facility Project - Brief Project Document
Proj # 6765

② PRL facility - Reviewed Contract activities
Customer communication

② ECLSS program
water recovery -
Reqts - SRR, Contract records

*S: Satisfactory - **CAR:** Corrective action required – **Ma:** Major corrective action – **mi:** Minor corrective action*
*N/A: Not applicable - **N/E:** Not evaluated - **P:** Product - **M:** Management*

QUALITY SYSTEM QUESTIONNAIRE

ASSESSMENT QUESTIONS	KEY Requirements	S	CAR Number Ma or mi	N/A	N/E
7.3 Design and development					
7.3.1 Design and development planning NRG 8823-1					
12 Does the organization plan and control the design and development of product ?		✓			
13 During the design and development planning, does the organization determine : a) the design and development stages (1) ? - ***in respect of organization, task sequence, mandatory steps, significant stages and method of configuration control,*** b) the review, verification and validation that are appropriate to each design and development stage ? and c) the responsibilities and authorities for design and development ?	M	✓			
14 Where appropriate, due to complexity, does the organization give consideration to the following activities : - ***structuring the design effort into significant elements ?*** - ***for each element, analyzing the tasks and the necessary resources for its design and development. Does This analysis consider an identified responsible person, design content, input data, planning constraints, and performance conditions. Is the input data specific to each element reviewed to ensure consistency with requirements ?***		✓			
15 Does the organization manage the interfaces between different groups involved in design and development to ensure effective communication and clear assignment of responsibility ?		✓			
16 Is planning output updated, as appropriate, as the design and development progresses ?		✓			
17 Are the different design and development tasks to be carried out defined according to specified safety or functional objectives of the product in accordance with customer and/or regulatory authority requirements (2) ?	P	✓			
7.3.2 Design and development inputs					
18 Are inputs relating to product requirements determined and are records maintained (see 4.2.4) (3) ? Do these inputs include : a) functional and performance requirements ? b) applicable statutory and regulatory requirements ? c) where applicable, information derived from previous similar designs ? and d) other requirements essential for design and development ?	M	✓			
19 Are these inputs reviewed for adequacy ?		✓			
20 Are requirements completed, unambiguous and not in conflict with each other ?		✓			

Guidance Notes

1) Give at least an example of a completed design & development plan, or an example of one in progress, that identifies the planning of tasks and key events.
2) Give an example
3) Review applicable input data (give examples)

Objective evidence assessed / Observations / Comments / N/A explanation

Facility Project - Brief Proj. Document form 1509 #22M. Code 6765

Facility Proj. Cost Estimate form 1570

Project Reqts Document - Prop. Research Lab. Jun 00

Design Phases - documented on spread sheet as 30/60/90/final review

*S: Satisfactory - **CAR:** Corrective action required – **Ma:** Major corrective action – **mi:** Minor corrective action*
*N/A: Not applicable - **N/E:** Not evaluated - **P:** Product - **M:** Management*

Thurs DSR — Jim Lindsay

ECLSS – water recovery, Oxygen generation

WKly mtgs

Verification/validation phase

SRR –
PDR –
CDR – } Project office has records of review

David Whitten
Thurs 2:00

Structural Design – ED23-0WI-001 Rev C

OGS Project. (Oxygen Generation System)

↳ Requirement Review –

Project Plan – ECLISS-FD21-009 – Basic 7/16/01

Des. Review – PDR/CDR documented on ECLISS/FD-21 Web-Site

Integrated Rack + Utility Process – CDR 3/20-5/15/02

Verification

ECR → EO as per Std 555

ECR#	EO#	P/N
ED23-2647	1	96M11546-1

QUALITY SYSTEM QUESTIONNAIRE

ASSESSMENT QUESTIONS	KEY Requirements	S	CAR Number Ma or mi	N/A	N/E
7.3 Design and development (continued)					
7.3.3 Design and development outputs					
21 Are the outputs of design and development provided in a form that enables verification against the design and development input and approved prior to release ?		✓			
22 Do the design and development outputs : a) meet the input requirements for design and development ? b) provide appropriate information for purchasing, production and for service provision ? c) contain or reference product acceptance criteria ? d) specify the characteristics of the product that are essential for its safe and proper use ? ***and*** ***e) identify key characteristics, when applicable, in accordance with design or contract requirements ?***	M	✓			
23 Is all pertinent data required to allow the product to be identified, manufactured, inspected, used and maintained defined by the organization; for example: - ***drawings, part lists, specifications ?*** - ***a listing of those drawings, part lists, and specifications necessary to define the configuration and the design features of the product ?*** - ***information on material, processes, type of manufacturing and assembly of the product necessary to ensure the conformity of the product ?***	M	✓			
7.3.4 Design and development review					
24 At suitable stages, are systematic reviews of design and development performed in accordance with planned arrangements (see 7.3.1) to (1) : a) evaluate the ability of the results of Design and development to meet requirements ? b) identify any problems and propose necessary actions ? ***and*** ***c) authorize progression to the next stage ?***	M	✓			
25 Do participants in such reviews include representatives of functions concerned with the design and development stage(s) being reviewed ?		✓			
26 Are records of the results of the reviews and any necessary actions maintained (see 4.2.4) ?		✓			
7.3.5 Design and development verification					
27 Is verification performed in accordance with planned arrangements (see 7.3.1) to ensure that the design and development outputs have met the design and development input requirements ?		✓			
28 Are records of the results of the reviews and any necessary actions maintained (see 4.2.4) ?		✓			

Note : Design and/or development verification may include activities such as :
- **performing alternative calculations**
- **comparing the new design with a similar proven design, if available**
- **undertaking tests and demonstrations, and**
- **reviewing the design stage documents before release.**

Guidance Notes

1) Give evidence of reviews

Objective evidence assessed / Observations / Comments / N/A explanation

Des Review - 60% 12/7/01
30% 9/7/01
90%

Outputs - Dwgs FAC M4199
Construction Spec. Appn
Base building - FAC-A-4205-G001

*S: Satisfactory - **CAR:** Corrective action required – **Ma:** Major corrective action – **mi:** Minor corrective action*
*N/A: Not applicable - **N/E:** Not evaluated - **P:** Product - **M:** Management*

QUALITY SYSTEM QUESTIONNAIRE

ASSESSMENT QUESTIONS	KEY Requirements	S	CAR Number Ma or mi	N/A	N/E
7.3 Design and development (continued)					
7.3.6 Design and development validation					
29 Is design and development validation performed in accordance with planned arrangements (see 7.3.1) to ensure that the resulting product is capable of meeting the requirements for the specified application or intended use, where known ?	P	✓			
30 Wherever practicable, is validation completed prior to the delivery or implementation of the Product ?		✓			
31 Are records of the results of validation and any necessary actions maintained (see 4.2.4) ?		✓			

Note:
-Design and/or development validation follows successful design and/or development verification.
-Validation is normally performed under operating conditions.
-Validation is normally performed on the final product, but may be necessary in the earlier stages prior to product completion.
-Multiple validations may be performed if there are different intended uses.

7.3.6.1 Documentation of design and/or development verification and validation					
32 At the completion of design and/or development, does the organization ensure that reports, calculations, test results, etc., demonstrate that the product definition meets the specification requirements for all identified operational conditions?	**M**	✓			
7.3.6.2 Design and/or development verification and validation testing					
33 Where tests are necessary for verification and validation, are these tests planned, controlled, reviewed, and documented to ensure and prove the following (1) : ***a) test plans or specifications identify the product being tested and the resources being used, define test objectives and conditions, parameters to be recorded, and relevant acceptance criteria ?*** ***b) test procedures describe the method of operation, the performance of the test, and the recording of the results ?*** ***c) the correct configuration standard of the product is submitted for the test ?*** ***d) the requirements of the test plan and the test procedures are observed ?*** ***e) the acceptance criteria are met ?***	P	✓			

Guidance Note

1) Give an example of a qualification report

Objective evidence assessed / Observations / Comments / N/A explanation

See previous 2 pages for programs - ECLSS pgm
EO23-OWI 001 - Structural Des.
Verified Validation of Drugs -

*S: Satisfactory - **CAR**: Corrective action required – **Ma**: Major corrective action – **mi**: Minor corrective action*
*N/A: Not applicable - **N/E**: Not evaluated - **P**: Product - **M**: Management*

QUALITY SYSTEM QUESTIONNAIRE

ASSESSMENT QUESTIONS	KEY Requirements	S	CAR Number Ma or mi	N/A	N/E

7.3 Design and development (continued)

7.3.7 Control of design and development changes					
34 Are design and development changes identified and records maintained ?		✓			
35 Are the changes reviewed, verified and validated, as appropriate, and approved before implementation (1) ?	P	✓			
36 Does the review of design and development changes include evaluation of the effect of the changes on constituent parts and product already delivered ?	P	✓			
37 Does the organization's change control process provide for customer and/or regulatory authority approval of changes, when required by contract or regulatory requirement ?		✓			
38 Records of the results of the review of changes and any necessary actions maintained (see 4.2.4) ?		✓			

Guidance Note

1) Give an example

Objective evidence assessed / Observations / Comments / N/A explanation

ECR#	EO#	DWG# PN#
ED23-2657	1	96M11514-1
ED23-2647	1	96M11546-1

*S: Satisfactory - **CAR**: Corrective action required – **Ma**: Major corrective action – **mi**: Minor corrective action*
*N/A: Not applicable - **N/E**: Not evaluated - **P**: Product - **M**: Management*

QUALITY SYSTEM QUESTIONNAIRE

ASSESSMENT QUESTIONS	KEY Requirements	S	CAR Number Ma or mi	N/A	N/E
7.4 Purchasing MWI MFGI 5300.1					
7.4.1 Purchasing process					
39 Does the organization ensure that purchased product conforms to specified purchase Requirements ?	P	S			
40 Is the type and extent of control applied to the Supplier and the purchased product dependent upon the effect of the purchased product on subsequent product realization or the final product ?		Mi mi			
41 Is the organization responsible for the quality of all products purchased from suppliers, including customer-designated sources ? yes		S			
42 Does the organization evaluate and select Suppliers based on their ability to supply product in accordance with the organization's requirements ? yes major acquisition / no		Mi mi			
43 Are criteria for selection, evaluation and re-evaluation established? by Solicitation for each contract					
44 Are records of the results of evaluations and any necessary actions arising from the evaluation maintained (see 4.2.4) ? - Records are ~~not~~ current SEQA org.		S			
45 Does the organization :	M	S			
a) Maintain a register of approved Suppliers that includes the scope of the approval (1) ? yes					
b) Periodically review Suppliers performance and use the records of these reviews as a basis for establishing the level of controls to be implemented (2) ? in major acquisition					
c) Define the necessary actions to take when dealing with Suppliers that do not meet requirements ? in contract					
d) Ensure where required that both the organization and all Suppliers use customer-approved special process sources ? - N/A				✓	
e) Ensure that the function having responsibility for approving Supplier quality systems has the authority to disapprove the use of sources ? - yes per contract		S			

Guidance Notes

1) Review current list of approved Suppliers reviewed
2) Review suppliers performance / measurement system (e.g.: supplier rating, etc.) Performance criteria identified with subsequent action

Objective evidence assessed / Observations / Comments / N/A explanation

Vendor audits MWI 5330.1, Capability and QMS ISO 9001. Initial assessment, monitor performance; quality. Verified Barber Nichols, Sierra Lobo, Metalex Redundit every 3 yrs. AVL verified. Reviewed audits of suppliers: Metalex dated 7/18/04 Still auditing ISO 9001:1994.
Acquisition Strategy is determined prior to Solicitation Mission Suitability requirements, Scored factor, Past performance Evaluation Riddle, FAR PART 15 or 12, NASA FAR supplement PART 14 Quality Requirements, Safety requirement, Subcontract requirements. FAR PART 44. Extent of control/qualification varies by extent of technical requirements associated with product type. COTS track performance Contract Surveillance, Performance reports, CDRL data requirements Fed Acquisition Principles/Requirements. Contract NAS8-01140
A- Procedure does not address qualification, performance criteria, consequences of poor performance. Actions when potential risk is identified during supplier audit not identified.

QUALITY SYSTEM QUESTIONNAIRE

ASSESSMENT QUESTIONS	KEY Requirements	S	CAR Number Ma or mi	N/A	N/E
7.4 Purchasing (continued)					
7.4.2 Purchasing information					
46 *Does purchasing information describe the product to be purchased, including where appropriate (1) :* *a) requirements for approval of product, procedures, processes and equipment ?* yes *b) requirements for qualification of personnel ?* *c) quality management system requirements ?* ***d) the name or other positive identification, and applicable issues of specifications, drawings, process requirements, inspection instructions and other relevant technical data ?*** ***e) requirements for design, test, examination, inspection and related instructions for acceptance by the Organization ?*** ***f) requirements for test specimens (e.g., production method, number, storage conditions) for design approval, inspection, investigation or auditing ?*** ***g) requirements relative to :*** ***- supplier notification to Organizationr of nonconforming product ? and*** ***- arrangements for Organizationr approval of supplier nonconforming material ?*** ***h) requirements for the supplier to notify the Organization of changes in product and/or process definition and, where required, obtain organization approval ?*** ***i) right of access by the organization, their customer, and authorities to all facilities involved in the order and to all applicable records ? and*** yes ***j) requirements for the supplier to flow down to subtier suppliers the applicable requirements in the purchasing documents, including key characteristics where required ?*** yes	P	S			
47 Does the organization ensure the adequacy of specified purchase requirements prior to their communication to the supplier ? yes		S			

Guidance Note

1) Examine purchase orders that apply to several types of procurement. Engineering Services, main engine

Objective evidence assessed / Observations / Comments / N/A explanation

SOW, data requirements, award fee, Make or buy plan SB, Provided Property, applicable regulations, Task direction flow work breakdown, DD 254 Contract Security Contract # NAS8-00187 Source inspection, right of entry, and per Fed Acquisition requirements. Reviewed Purchase orders ref: Hamilton Standard PO FH151-04, L Miller, Arrow Electric PONAS8-98053, NAS8-01140

*S: Satisfactory - **CAR:** Corrective action required – **Ma:** Major corrective action – **mi:** Minor corrective action*
N/A: Not applicable - N/E: Not evaluated - P: Product - M: Management

QUALITY SYSTEM QUESTIONNAIRE

ASSESSMENT QUESTIONS	KEY Requirements	S	CAR Number Ma or mi	N/A	N/E
7.4 Purchasing (continued)					
7.4.3 Verification of purchased product					
48 Does the organization establish and implement the inspection or other activities necessary for ensuring that purchased product meets specified purchase requirements, they may include ***obtaining objective evidence of the quality of the product from suppliers (e.g., accompanying documentation, certificate of conformity, test reports, statistical records, process control, inspection and audit at supplier's premises, review of the required documentation, inspection of products upon receipt, and, delegation of verification to the supplier, or supplier certification*** ? yes	P	S			
49 Is purchased product held until it has been verified as conforming to specified requirements unless it is released under positive recall procedure ? yes		S			
50 Where the organization utilizes test reports to verify purchased product, is the data in those reports acceptable per applicable specifications (1) ? yes		S			
51 Does the organization periodically validate test reports for raw material (1) ? yes		S			
52 Where the organization delegates verification activities to the supplier, are the requirements for delegation defined and a register of delegations maintained (1) ?		S			
53 Where the organization or its customer intends to perform verification at the supplier's premises, does the organization state the intended verification arrangements and method of product release in the purchasing information?		S			
54 Where specified In the contract, is the customer or the customer's representative afforded the right to verify at the supplier's premises and the organization's premises that subcontracted product conforms to specified requirements ?		S			
55 It is ensured that verification by the customer is not used by the organization as evidence of effective control of quality by the supplier (it does not absolve the organization of the responsibility to provide acceptable product, nor shall it preclude subsequent rejection by the customer) ?		S			

Guidance Note

1) Give an example P/N NC55H90R9FS, R280222000, SV825500-1 S/N 0001

Objective evidence assessed / Observations / Comments / N/A explanation

Inspection Receptance Record #04347, 04348
Verbal instruction with each receiver
Periodic testing of raw materials
IAR 4224 606 P6, 303, 416

*S: Satisfactory - **CAR:** Corrective action required – **Ma:** Major corrective action – **mi:** Minor corrective action*
N/A: Not applicable - N/E: Not evaluated - P: Product - M: Management

QUALITY SYSTEM QUESTIONNAIRE

ASSESSMENT QUESTIONS	KEY Requirements	S	CAR Number Ma or mi	N/A	N/E
7.5 Production and service provision					
7.5.1 Control of production and service provision					
56 Does planning consider, as applicable :		S			
- *the establishment of process controls and development of control plans where key characteristics have been identified* Min Acceptance Objectives					
- *the identification of in-process verification points when adequate verification of conformance cannot be performed at a later stage of realization* Constant monitoring	P				
- *the design, manufacture, and use of tooling so that variable measurements can be taken, particularly for key characteristics, and*		S			
- *special processes (see 7.5.2).* Test requirements translated to development of test procedure					
57 Does the organization plan and carry out production and service provision under controlled conditions (1). yes		S			
Do these controlled conditions include, as applicable :					
a) the availability of information that describes the characteristics of the product ? test procedures					
b) the availability of work instructions, as necessary ? yes					
c) the use of suitable equipment ? Payload Rack Checkout unit.					
d) the availability and use of monitoring and measuring devices ? yes					
e) the implementation of monitoring and measurement ? yes					
f) the implementation of release, delivery and post-delivery activities ? yes					
g) accountability for all product during manufacture (e.g., parts quantities, split orders, nonconforming product) ? Part Marking & Serialization					
h) evidence that all ~~manufacturing and~~ inspection operations have been completed as planned, or as otherwise documented and authorized ? Test plan	P				
i) provision for the prevention, detection, and removal of foreign objects ? Built into procedures					
j) monitoring and control of utilities and supplies such as water, compressed air, electricity and chemical products to the extent they affect product quality ? and yes					
k) criteria for workmanship, which shall be stipulated in the clearest practical manner (e.g., written standards, representative samples or illustrations) ? yes		S			

Guidance Notes

1) List the Part Number(s) used for this review On-orbit operations, MSG Integration Soyuz

Objective evidence assessed / Observations / Comments / N/A explanation

Payload operations Monitoring.
MSG Plan 002, IR Plan Microgravity Science Glovebox 9/30/03
Contract NAS8-02060 Integration Review 10/16/03, 10/16/03 Kickoff
10/16-24/03 Doc Review, 10/24/03 RIDs due to MSG IPIN, 10/28/03 RIDs Responses
10/29/03 Review Committee mtg. MSFC-RQMT-2888, MSFC Plan 3052
MSFC-HDBK-3051, ESA Cargo Documentation Integration Schedule
DSM Integration Review 11/5/03, COFR, PCR 3/1/04.
ICD- MSFC-ICD-3270; MGUEMSGSPCEN001.

*S: Satisfactory - **CAR**: Corrective action required – **Ma**: Major corrective action – **mi**: Minor corrective action*
*N/A: Not applicable - **N/E**: Not evaluated - **P**: Product - **M**: Management*

QUALITY SYSTEM QUESTIONNAIRE

ASSESSMENT QUESTIONS	KEY Requirements	S	CAR Number Ma or mi	N/A	N/E
7.5 Production and service provision (continued)					
7.5.1.1 Production documentation					
58 Are production operations carried out in accordance with approved data ? yes		S			
59 Does the data contain as necessary :	P	S			
a) drawings, parts lists, process flow charts including inspection operations, production documents (e.g., manufacturing plans, traveler, router, work order, process cards); and inspection documents (see 8.2.4.1) ? and					
b) a list of specific or non-specific tools and numerical control (NC) machine programs required and any specific instructions associated with their use ? no NC machines		S			
7.5.1.2 Control of production process changes					
60 Are persons authorized to approve changes to production processes identified (1) ? yes	M	S			
61 Has the organization identified and obtained acceptance of changes that require customer and/or regulatory authority approval in accordance with contract or regulatory requirements ? yes		S			
62 Are changes affecting processes, production equipment, tools and programs documented ?	P	S			
63 Are procedures available to control their implementation ? yes		S			
64 Are the results of changes to production processes assessed to confirm that the desired effect has been achieved without adverse effects to product quality ? yes	P	S			
7.5.1.3 Control of production equipment, tools and numerical control (N.C.) machine programs					
65 Are production equipment, tools and programs validated prior to use and maintained and inspected periodically according to documented procedures ?	P				✓
66 Does validation prior to production use include verification of the first article produced to the design data/specification ?	P				✓
67 Are storage requirements, including periodic preservation/condition checks, established for production equipment or tooling in storage ?					✓
7.5.1.4 Control of work transferred, on a temporary basis, outside the organization's facilities					
68 When planning to temporarily transfer work to a location outside the organization's facilities, does the organization define the process to control and validate the quality of the work ?	M				✓

Guidance Notes

1) Clearly defined list or procedures identified by released lists.

Objective evidence assessed / Observations / Comments / N/A explanation

Test procedures in place ref: SPICE
Changes are controlled, redline process in place.

*S: Satisfactory - **CAR**: Corrective action required – **Ma**: Major corrective action – **mi**: Minor corrective action*
*N/A: Not applicable - **N/E**: Not evaluated - **P**: Product - **M**: Management*

QUALITY SYSTEM QUESTIONNAIRE

ASSESSMENT QUESTIONS	KEY Requirements	S	CAR Number Ma or mi	N/A	N/E
7.5 Production and service provision (continued)					
7.5.1.5 Control of service operations					
69 Where servicing is a specified requirement, do service operation processes provide for : ***a) a method of collecting and analyzing In-service data ?*** ***b) actions to be taken where problems are identified after delivery, including investigation, reporting activities, and actions on service information consistent with contractual and/or regulatory requirements (1) (2) ?*** ***c) the control and updating of technical documentation ?*** ***d) the approval, control, and use of repair schemes (3) ? and,*** ***e) the controls required for off-site work (e.g., organization's work undertaken at the customer's facilities) ?***					
7.5.2 Validation of processes for production and service provision					
70 Does the organization validate any processes for production and service provision where the resulting output cannot be verified by subsequent monitoring or measurement (This includes any processes where deficiencies become apparent only after the product is in use or the service has been delivered) (4) ? **Note :These processes are frequently referred to as special processes.**	P				
71 Does validation demonstrate the ability of these processes to achieve planned results ?					
72 Has the organization established arrangements for these processes including, as applicable : a) defined criteria for review and approval of the processes ? ***-qualification and approval of special processes prior to use ?*** b) approval of equipment and qualification of personnel ? c) use of specific methods and procedures ? ***- control of the significant operations and parameters of special processes in accordance with documented process specifications and changes thereto (5) ?*** d) requirements for records (see 4.2.4) ? e) and revalidation ?	M				

Guidance Notes

1) Review reports issued following visits to the customer (technical support). Comment on method of collection of in service data. Examine some investigation reports
2) Review evidence of implementation of corrective and preventive actions.
3) Review evidence of what has been assessed (e.g.: maintenance manual, repair manual, information to customer)
4) Verify the existence of list of special processes.
5) Give examples

Objective evidence assessed / Observations / Comments / N/A explanation

7.5.2 Not applicable to programs audited during this visit.
7.5.1.5 Not applicable to programs audited.

*S: Satisfactory - **CAR:** Corrective action required – **Ma:** Major corrective action – **mi:** Minor corrective action*
*N/A: Not applicable - **N/E:** Not evaluated - **P:** Product - **M:** Management*

QUALITY SYSTEM QUESTIONNAIRE

ASSESSMENT QUESTIONS	KEY Requirements	S	CAR Number Ma or mi	N/A	N/E
7.5 Production and service provision (continued)					
7.5.1.5 Control of service operations					
69 Where servicing is a specified requirement, do service operation processes provide for :					
a) a method of collecting and analyzing in-service data ?				✓	
b) actions to be taken where problems are identified after delivery, including investigation, reporting activities, and actions on service information consistent with contractual and/or regulatory requirements (1) (2) ?					
c) the control and updating of technical documentation ?					
d) the approval, control, and use of repair schemes (3) ? and,					
e) the controls required for off-site work (e.g., organization's work undertaken at the customer's facilities) ?					
7.5.2 Validation of processes for production and service provision					
70 Does the organization validate any processes for production and service provision where the resulting output cannot be verified by subsequent monitoring or measurement (This includes any processes where deficiencies become apparent only after the product is in use or the service has been delivered) (4) ?	P				✓
Note :These processes are frequently referred to as special processes. no Samples found					
71 Does validation demonstrate the ability of these processes to achieve planned results ? no Sample					✓
72 Has the organization established arrangements for these processes including, as applicable :	M				
a) defined criteria for review and approval of the processes ?					✓
-qualification and approval of special processes prior to use ?					
b) approval of equipment and qualification of personnel ?					
c) use of specific methods and procedures ?					
- control of the significant operations and parameters of special processes in accordance with documented process specifications and changes thereto (5) ?					
d) requirements for records (see 4.2.4) ?					
e) and revalidation ? no Samples found					

Guidance Notes

1) Review reports issued following visits to the customer (technical support). Comment on method of collection of in service data. Examine some investigation reports
2) Review evidence of implementation of corrective and preventive actions.
3) Review evidence of what has been assessed (e.g.: maintenance manual, repair manual, information to customer)
4) Verify the existence of list of special processes.
5) Give examples

Objective evidence assessed / Observations / Comments / N/A explanation

No evidence of special processes

*S: Satisfactory - **CAR**: Corrective action required – **Ma**: Major corrective action – **mi**: Minor corrective action*
*N/A: Not applicable - **N/E**: Not evaluated - **P**: Product - **M**: Management*

QUALITY SYSTEM QUESTIONNAIRE

ASSESSMENT QUESTIONS	KEY Requirements	S	CAR Number Ma or mi	N/A	N/E
7.5 Production and service provision (continued)					
7.5.3 Identification and traceability					
73 Where appropriate, has the organization identified the product by suitable means throughout product realization ? yes		S			
74 Does the organization maintain the identification of the configuration of the product in order to identify any differences between the actual configuration and the agreed configuration ?	P	S			
75 Has the organization identified the product status with respect to monitoring and measurement requirements ?		S			
76 When acceptance authority media are used (e.g., stamps, electronic signatures, passwords), does the organization establish and document controls for the media (1) ? MPG 8130.2		S			
77 Where traceability is a requirement, does the organization control and record the unique identification of the product (see 4.2.4) ? TPS or TCP		S			
78 According to the level of traceability required by contract, regulatory, or other established requirement, does the organization's system provide for (2) : P/N / S/N ***a) identification to be maintained throughout the product life ?*** ***b) all the products manufactured from the same batch of raw material or from the same manufacturing batch to be traced, as well as the destination (delivery, scrap) of all products of the same batch ?*** ***c) in any assembly, the identity of its components and those of the next higher assembly to be traced?*** ***d) in any given product, a sequential record of its production (manufacture, assembly, inspection) to be retrieved ?***	P	S S S S			

Note: In some industry sectors, configuration management is a means by which identification and traceability is maintained.

7.5.4 Customer property MPG 4000. ID & Property Tags					
79 Does the organization exercise care with customer property while it is under the organization's control or being used by the organization (3) ? yes		S			
80 Has the organization identified, verified, protected and safeguarded customer property provided for use or incorporation into the product ? yes		S			
81 Does the organization define methods to identify and record customer products that are lost, damaged or otherwise made unusable and report such to the customer ? - yes		S			

Note: Customer property can include intellectual property, ***including customer furnished data used for design, production and/or inspection.***

Guidance Notes

1) Give examples of method(s) used tags, plates, Inspection Stamps
2) Give examples of traceability level applied (up and down) - P/N Serial number
3) Identify types of product supplied by the customer. flight assemblies for test

Objective evidence assessed / Observations / Comments / N/A explanation

CSP# tag is utilized to track and ID & trace is recorded on tag.
Stamps: Quality, Safety x4 340, yearly Stamp audit
Lost or terminated blind procedure. Reviewed database and stamp inventory - Users: issue stamp, lost stamp, turn in stamp,

*S: Satisfactory - **CAR**: Corrective action required – **Ma**: Major corrective action – **mi**: Minor corrective action*
*N/A: Not applicable - **N/E**: Not evaluated - **P**: Product - **M**: Management*

QUALITY SYSTEM QUESTIONNAIRE

ASSESSMENT QUESTIONS	KEY Requirements	S	CAR Number Ma or mi	N/A	N/E
7.5 Production and service provision (continued)					
7.5.3 Identification and traceability					
73 Where appropriate, has the organization identified the product by suitable means throughout product realization ?		✓			
74 Does the organization maintain the identification of the configuration of the product in order to identify any differences between the actual configuration and the agreed configuration ?	P	✓			
75 Has the organization identified the product status with respect to monitoring and measurement requirements ?		✓			
76 When acceptance authority media are used (e.g., stamps, electronic signatures, passwords), does the organization establish and document controls for the media (1) ?		✓			
77 Where traceability is a requirement, does the organization control and record the unique identification of the product (see 4.2.4) ?		✓			
78 According to the level of traceability required by contract, regulatory, or other established requirement, does the organization's system provide for (2) : ***a) identification to be maintained throughout the product life ?*** ***b) all the products manufactured from the same batch of raw material or from the same manufacturing batch to be traced, as well as the destination (delivery, scrap) of all products of the same batch ?*** ***c) in any assembly, the identity of its components and those of the next higher assembly to be traced?*** ***d) In any given product, a sequential record of its production (manufacture, assembly, inspection) to be retrieved ?***	P	✓			

Note: In some industry sectors, configuration management is a means by which identification and traceability is maintained.

7.5.4 Customer property					
79 Does the organization exercise care with customer property while it is under the organization's control or being used by the organization (3) ?		✓			
80 Has the organization identified, verified, protected and safeguarded customer property provided for use or incorporation into the product ?		✓			
81 Does the organization define methods to identify and record customer products that are lost, damaged or otherwise made unusable and report such to the customer ?		✓			

Note: Customer property can include intellectual property, ***including customer furnished data used for design, production and/or inspection.***

Guidance Notes

1) Give examples of method(s) used
2) Give examples of traceability level applied (up and down)
3) Identify types of product supplied by the customer.

Objective evidence assessed / Observations / Comments / N/A explanation

7.5.3 - Product - output of analysis - reports - Test results identified as to part # & document # along with status of same

7.5.4 Documents - proprietary - Syst. Qual. Review - Alenia - CLT-EQ-AI-0007
numerous documents maintained in bonded locked Room
MPLM Drawings

*S: Satisfactory - **CAR:** Corrective action required – **Ma:** Major corrective action – **mi:** Minor corrective action*
*N/A: Not applicable - **N/E:** Not evaluated - **P:** Product - **M:** Management*

QUALITY SYSTEM QUESTIONNAIRE

ASSESSMENT QUESTIONS	KEY Requirements	S	CAR Number Ma or mi	N/A	N/E
7.5 Production and service provision (continued)					
7.5.5 Preservation of product					
82 Does the organization preserve the conformity of product during internal processing and delivery to the intended destination ?		S			
83 Does the preservation include identification, handling, packaging, storage and protection ?		S			
84 Does preservation also apply to the constituent parts of a product ?		S			
85 Does preservation of product also Include, where applicable in accordance with product specifications and/or regulations, provisions for :	P				
a) cleaning ?					
b) prevention, detection and removal of foreign objects ?					
c) special handling for sensitive products ?					
d) marking and labeling including safety warnings ? Hazmat labels					
e) shelf life control and stock rotation ? yes					
f) special handling for hazardous materials ? Hazmat safety regulations		S			
86 Does the organization ensure that documents required by the contract/order to accompany the product, are present at delivery and are protected against loss and deterioration ? As applicable		S			

Objective evidence assessed / Observations / Comments / N/A explanation

Flight Standards followed. Observed assemblies in test areas. Articles are appropriately protected. ESD program in place. Special handling of flight hardware.
Rq P/N 96M A900-1-105-900, 96M13153-1-106

*S: Satisfactory - **CAR:** Corrective action required – **Ma:** Major corrective action – **mi:** Minor corrective action*
*N/A: Not applicable - **N/E:** Not evaluated - **P:** Product - **M:** Management*

QUALITY SYSTEM QUESTIONNAIRE

ASSESSMENT QUESTIONS	KEY Requirements	S	CAR Number Ma or mi	N/A	N/E
7.6 Control of monitoring and measuring devices MFG8730.5					
87 Does the organization determine the monitoring and measurement to be undertaken and the monitoring and measuring devices needed to provide evidence of conformity of product to determined requirements (see 7.2.1) (1) ? yes	P	S			
88 Does the organization maintain a register of these monitoring and measuring devices, and define the process employed for their calibration including details of equipment type, unique identification, location, frequency of checks, check method and acceptance criteria ? reviewed list/data base ***Note : Monitoring and measuring devices include, but are not limited to: test hardware, test software, automated test equipment (ATE) and plotters used to produce inspection data. It also includes personally owned and customer supplied equipment used to provide evidence of product conformity.***	M	S			
89 Does the organization establish processes to ensure that monitoring and measurement can be carried out and are carried out in a manner that is consistent with the monitoring and measurement requirements ? yes		S			
90 Does the organization ensure that environmental conditions are suitable for the calibrations, inspections, measurements and tests being carried out ? verified environmental		S			
91 Where necessary to ensure valid results, is measuring equipment : a) calibrated or verified at specified intervals, or prior to use, against measurement standards traceable to international or national measurement standards; where no such standards exist, the basis used for calibration or verification shall be recorded (2) ? yes b) adjusted or re-adjusted as necessary ? yes c) identified to enable the calibration status to be determined ? yes d) safeguarded from adjustments that would invalidate the measurement result ? seal e) protected from damage and deterioration during handling, maintenance and storage ? protective cases/covers ***f) recalled to a defined method when requiring calibration ?*** yes		S			
92 Does the organization assess and record the validity of the previous measuring results when the equipment is found not to conform to requirements ? yes		S			
93 Does the organization take appropriate action on the equipment and any product affected ? yes	P	S			
94 Are records of the results of calibration and verification maintained (see 4.2.4) ? yes		S			
95 When used in the monitoring and measurement of specified requirements, is the ability of computer software to satisfy the intended application confirmed ? yes	P	S			
96 Is this undertaken prior to initial use and reconfirmed as necessary ? yes		S			

Guidance Notes

meters only Cal as needed

1) Review that the organization has a process for ensuring the capability of measurement system (e.g. Interval Analysis, Resolution Analysis, Gage Repeatable & Reproducibility, etc.) yes
2) Ensure the links to the recognized international / national standard. traceable to NIST

Objective evidence assessed / Observations / Comments / N/A explanation

Verified Status of 3090004, M629829, M620773, M635577, M631229 M633677 in data base.
monthly recall list published via email, recall report
Cal Procedure 2-0039: Plug gage, 2-0049: Pressure Gage
Items have identifying number, tags on instruments indicate Status/Cal Date. Disposition report utilized for out of tolerance equipment. Notification to owner
Temp & Humidity recorders in building and labs. Verified calibrated
1-0580 procedure in lab. 1-0270 oscilloscope, Thread gages, Plug gages
Multimeters,

*S: Satisfactory - **CAR**: Corrective action required – **Ma**: Major corrective action – **mi**: Minor corrective action*
*N/A: Not applicable - **N/E**: Not evaluated - **P**: Product - **M**: Management*

QUALITY SYSTEM QUESTIONNAIRE

ASSESSMENT QUESTIONS	KEY Requirements	S	CAR Number Ma or mi	N/A	N/E
8 MEASUREMENT, ANALYSIS AND IMPROVEMENT					
8.1 General TD70-08 Planning Document.					
01 Does the organization plan and implement the monitoring, measurement, analysis and improvement processes needed (1) : a) to demonstrate conformity of the product ? Test Process b) to ensure conformity of the quality management system, and ? following process updating QIs c) to continually improve the effectiveness of the quality management system ?	M	S			
02 Does this include determination of applicable methods, including statistical techniques, and the extent of their use ?		S			

***Note* : According to the nature of the product and depending on the specified requirements, statistical techniques may be used to support :**

-design verification (e.g., reliability, maintainability, safety) ;

-process control :

- ***selection and inspection of key characteristics;***
- ***process capability measurements;*** Test Reviews review ; article, objective, facilities
- ***statistical process control;***
- ***design of experiment;***

-inspection – matching sampling rate to the criticality of the product and to the process capability ;

-failure mode and effect analysis.

Guidance Notes

1) Give examples of data Test Requirement 5.7, 4/12/03, Environmental Prevention Plan 3/04

Objective evidence assessed / Observations / Comments / N/A explanation also 8.2.4 :

Test Service organization Transportation Directorate Safety and Mission Assurance. Test operation Support are all involved in planning. TD73 Standard process is utilized to plan. Test document identifies requirements ie: test matrix, test parameters facility operating procedures, test checkout procedure. Test preparation sheets are utilized, TD70-004 Test Procedure Instructions, Mandatory Inspection points utilized to enforce compliance, to processes and systems. Measurement list. Environmental Pollution Prevention Plan Update 3/04 during new product planning EPA issues are evaluated as part of test Readiness review.

*S: Satisfactory - **CAR:** Corrective action required – **Ma:** Major corrective action – **mi:** Minor corrective action*
*N/A: Not applicable - **N/E:** Not evaluated - **P:** Product - **M:** Management*

QUALITY SYSTEM QUESTIONNAIRE

ASSESSMENT QUESTIONS	KEY Requirements	S	CAR Number Ma or mi	N/A	N/E
8.2 Monitoring and measurement (continued)					
8.2.1 Customer satisfaction					
03 As one of the measurements of the performance of the quality management system, does the organization monitor information relating to customer perception as to whether the organization has met customer requirements (1) ?		✓			
04 Are the methods for obtaining and using this information determined?		✓			
8.2.2 Internal audit MPG 1280.1 Rev E					
05 Does the organization conduct internal audits at planned intervals to determine whether the quality management system (2) : a) conforms to the planned arrangements (see 7.1), to the requirements of this International Standard and to the quality management system requirements established by the organization? and b) is effectively implemented and maintained?	M		NC		Carry over
06 Is an audit program planned, taking into consideration the status and importance of the processes and areas to be audited, as well as the results of previous audits?		✓			
07 Is the audit criteria, scope, frequency and methods defined?		✓			
08 Does the selection of auditors and conduct of audits ensure objectivity and impartiality of the audit process (3) ?		✓			
09 Does the organization ensure internal auditors do not audit their own work ?		✓			
10 Are the responsibilities and requirements for planning and conducting audits, and for reporting results and maintaining records (see 4.2.4) defined in a documented procedure ?		✓			
11 Do the management responsible for the areas being audited ensure that actions are taken without undue delay to eliminate detected nonconformities and their causes ?	M	✓			
12 Do follow-up activities include the verification of the actions taken and the reporting of verification results (see 8.5.2) (4) ?		✓			
13 Are detailed tools and techniques developed such as check sheets, process flowcharts, or any similar method to support audit of the quality management system requirements ?		✓			
14 Are the selected internal audit tools acceptable in measuring the effectiveness of the internal audit and overall organization performance ?		✓			
15 Do internal audits also meet contract and/or regulatory requirements ?		✓			

Guidance Notes

1) Give examples of how customer's satisfaction is measured, committed, and acted upon.
2) Review of audit plan (status of the previous year and progress of the current year).
3) Check the list of approved auditors.
4) Review type of audits (questionnaire, synthesis, circulation, request for corrective actions, corrective actions follow-up).

Objective evidence assessed / Observations / Comments / N/A explanation

Kerry Deans

Audit schedule - Audit objectivity + independence

Audit # ED 05200401 -

PS 02200401 - Obs, obs. concerns, NC's - Reviewed Audit Report

NC #605

evidence of customer satisfaction provided at mgt Review - Bal. scorecard

*S: Satisfactory - **CAR**: Corrective action required – **Ma**: Major corrective action – **mi**: Minor corrective action*
N/A: Not applicable - N/E: Not evaluated - P: Product - M: Management

QUALITY SYSTEM QUESTIONNAIRE

ASSESSMENT QUESTIONS	KEY Requirements	S	CAR Number Ma or mi	N/A	N/E
8.2 Monitoring and measurement (continued)					
8.2.3 Monitoring and measurement of processes					
16 Does the organization apply suitable methods for monitoring and, where applicable, measurement of the quality management system processes ? Test input/output QPS		S			
17 Do these methods demonstrate the ability of the processes to achieve planned results ? yes QPS/TCP		S			
18 When planned results are not achieved, is correction and corrective action taken, as appropriate, to ensure conformity of the product ? treat as nonconformance		S			
19 In the event of process nonconformity, does the organization (1) : ***a) take appropriate action to correct the nonconforming process ?*** yes ***b) evaluate whether the process nonconformity has resulted in product nonconformity ?*** and yes ***c) identify and control the nonconforming product in accordance with clause 8.3 ?***	P	S S S			
8.2.4 Monitoring and measurement of product					
20 Does the organization monitor and measure the characteristics of the product to verify that product requirements have been met ? yes	P	S			
21 Is this carried out at appropriate stages of the product realization process in accordance with the planned arrangements (see 7.1) ? yes MIP		S			
22 When key characteristics have been identified, are they monitored and controlled ?	P	S			
23 When the organization uses sampling inspection as a means of product acceptance, is the plan statistically valid and appropriate for use ? yes		S			
24 Does the plan preclude the acceptance of lots whose samples have known nonconformities ? yes		S			
25 When required, is the plan submitted for customer approval ? yes		S			
26 Is product held until it has been inspected or otherwise verified as conforming to specified requirements, except when product is released under positive-recall procedures pending completion of all required measurement and monitoring activities ? yes	P	S			
27 Is evidence of conformity with the acceptance criteria maintained ? yes		S			
28 Do records indicate the person(s) authorizing release of product (see 4.2.4) ? yes		S			
29 Is product release and service delivery held until all the planned arrangements (see 7.1) have been satisfactorily completed, unless otherwise approved by a relevant authority and, where applicable, by the customer ? yes		S			

Guidance Note

1) Give examples of non conformity (product, process, ...): Test process, Chlorine leak

Objective evidence assessed / Observations / Comments / N/A explanation

Data Analysis to ensure parameters of process is achieved QPS utilized for nonconformances. Pilot Test and Structural Lifecycle Test Series Test request. Cryo Structural Test Conditions Per STF TCP 006, STF-FOP-016 Control Systems, STF-FOP-08 Cutoff Checks STF FOP 017 Instrumentation, STF-FOP-014 Mechanical Systems

*S: Satisfactory - **CAR**: Corrective action required – **Ma**: Major corrective action – **mi**: Minor corrective action*
*N/A: Not applicable - N/E: Not evaluated - **P**: Product - **M**: Management*

QUALITY SYSTEM QUESTIONNAIRE

ASSESSMENT QUESTIONS	KEY Requirements	S	CAR Number Ma or mi	N/A	N/E
8.2 Monitoring and measurement (continued)					
8.2.4.1 Inspection documentation also See 8.2.4 MFG 8730.2					
30 Are measurement requirements for product or service acceptance documented ?		S			
31 Does this documentation, which may be part of the production documentation, include : *a) Criteria for acceptance and/or rejection ?* Yes Test *b) Where in the sequence measurement and testing operations are performed ?* MIP *c) a record of the measurement results ? and* Yes reviewed *d) type of measurement instruments required and any specific instructions associated with their use ?* Instruments	P	S			
32 Do test records show actual test results data when required by the specification or acceptance test plan ? Yes as applicable		S			
33 When required to demonstrate product qualification does the organization ensure that records provide evidence that the product meets the defined requirements ?		S			
8.2.4.2 First article inspection Proof/Test					
34 Does the organization's system provide a process for the inspection, verification, and documentation of a representative item from the first production run of a new part, or following any subsequent change that invalidates the previous first article inspection result (1) ? Yes Extensive documentation Yes	P	S			

Guidance Note

1) Give examples of first article (new product and change). SPICE, 96M11900-1-105,

Objective evidence assessed / Observations / Comments / N/A explanation

Technology Proof of Concept. See notes pg. 42

*S: Satisfactory - **CAR**: Corrective action required – **Ma**: Major corrective action – **mi**: Minor corrective action*
*N/A: Not applicable - N/E: Not evaluated - **P**: Product - **M**: Management*

QUALITY SYSTEM QUESTIONNAIRE

ASSESSMENT QUESTIONS	KEY Requirements	S	CAR Number Ma or mi	N/A	N/E
8.3 Control of nonconforming product TD10007.					
Note: The term "nonconforming product" includes nonconforming product returned from a customer.					
35 Does the organization ensure that product which does not conform to requirements is identified and controlled to prevent its unintended use or delivery ?	P	S			
36 Are the controls and related responsibilities and authorities for dealing with nonconforming product defined in a documented procedure ?		S			
37 Does the organization's documented procedure define the responsibility for review and authority for the disposition of nonconforming product and the process for approving personnel making these decisions ?		S			
38 Does the organization deal with nonconforming product in one or more of the following ways by: a) taking action to eliminate the detected nonconformity ? b) authorizing its use, release or acceptance under concession by a relevant authority and, where applicable, by the customer ? c) taking action to preclude its original intended use or application ?	P	S			
39 Does the organization prevent dispositions of use-as-is or repair, unless specifically authorized by the customer, if test engineer/team lead, Project ***- the product is produced to customer design ? or*** MRB process ***- the nonconformity results in a departure from the contract requirements ?*** yes ***(Unless otherwise restricted in the contract, is organization-designed product, which is controlled via a customer specification, dispositioned by the organization as-use-as is or repair, provided the nonconformity does not result in a departure from customer-specified requirements ?)*** yes		S			
40 Is product dispositioned for scrap conspicuously and permanently marked, or positively controlled, until physically rendered unusable ?	P	S			
41 Are records of the nature of nonconformities and any subsequent actions taken, including concessions obtained, maintained (see 4.2.4) ? yes		S			
42 When nonconforming product is corrected, is it subject to re-verification to demonstrate conformity to the requirements ? yes		S			
43 When nonconforming product is detected after delivery or use has started, does the organization take action appropriate to the effects, or potential effects, of the nonconformity ?	P	S			
44 In addition to any contract or regulatory authority reporting requirements, does the organization's system provide for timely reporting of delivered nonconforming product that may affect reliability or safety ? yes	P	S			
45 Does notification include a clear description of the nonconformity, which includes as necessary, parts affected, customer and/or organization part numbers, quantity, and date(s) delivered ? yes		S			

Objective evidence assessed / Observations / Comments / N/A explanation

QTPS is utilized to document nonconformance. Withhold tags. QTPS is test constraint. Ref TPS-STF 1480-QM: TD 17725, STF 1469-QC: TD 017965 STF-1470-QT: TD 017981. Ref discharge: DSN001 3/25/03 and back-up analytical data. Containment for surveillance by Clarus Inspection and Integrated testing unit, training & ground unit. nonconformance Process 8730.3. Reviewed TDR Log and TDR001, 002, 003 Fabricated Product Discrepancy Record, TDR & DR Ref DR 7366, 7273, 7315, 7259, SLIDR 0002029, 0002084, 0002112, 7361, 7362, 7363

*S: Satisfactory - **CAR**: Corrective action required – **Ma**: Major corrective action – **mi**: Minor corrective action*
*N/A: Not applicable - **N/E**: Not evaluated - **P**: Product - **M**: Management*

QUALITY SYSTEM QUESTIONNAIRE

ASSESSMENT QUESTIONS	KEY Requirements	S	CAR Number Ma or mi	N/A	N/E
8.4 Analysis of data					
46 Does the organization determine, collect and analyse appropriate data to demonstrate the suitability and effectiveness of the quality management system and to evaluate where continual improvement of the effectiveness of the quality management system can be made ?	M	✓			
47 Does this include data generated as a result of monitoring and measurement and from other relevant sources ?		✓			
48 Does the analysis of data provide information relating to : a) customer satisfaction (see 8.2.1) (1) ? b) conformity to product requirements (see 7.2.1) ? c) characteristics and trends of processes and products including opportunities for preventive action ? And d) suppliers ?		✓			

Guidance Note

1) Give examples and check how the organization measures the effectiveness.

Objective evidence assessed / Observations / Comments / N/A explanation

Observed data analysis - evidenced in Balanced Scorecard measures at management review dated 5/25/04.

*S: Satisfactory - **CAR**: Corrective action required – **Ma**: Major corrective action – **mi**: Minor corrective action*
*N/A: Not applicable - **N/E**: Not evaluated - **P**: Product - **M**: Management*

QUALITY SYSTEM QUESTIONNAIRE

ASSESSMENT QUESTIONS	KEY Requirements	S	CAR Number Ma or mi	N/A	N/E
8.5 Improvement					
8.5.1 Continual improvement					
49 Does the organization continually improve the effectiveness of the quality management system through the use of the quality policy, quality objectives, audit results, analysis of data, corrective and preventive actions and management review ?					✓
8.5.2 Corrective action					
50 Does the organization take action to eliminate the cause of nonconformities in order to prevent recurrence (1) ? yes Extensive evaluation	P	S			
51 Are Corrective actions appropriate to the effects of the nonconformities encountered ?		S			
52 Is a documented procedure established to define requirements for :		S			
a) reviewing nonconformities (including customer complaints) ?					
b) determining the causes of nonconformities ? yes					
c) evaluating the need for action to ensure that nonconformities do not recur ?					
d) determining and implementing action needed ?					
e) recording of the results of the action taken (see 4.2.4) ? yes DR					
f) reviewing corrective action taken ? yes					
g) flow down of the corrective action requirement to a supplier, when it is determined that the supplier is responsible for the root cause ? and FAP PART 49 PMA Supplement is part of control. See more notes					
h) specific actions where timely and/or effective corrective actions are not achieved ?					
8.5.3 Preventive action					
53 Does the organization determine action to eliminate the causes of potential nonconformities in order to prevent their occurrence (2) ?	M				✓
54 Are preventive actions appropriate to the effects of the potential problems ?					✓
55 Is a documented procedure established to define requirements for :					✓
a) determining potential nonconformities and their causes ?					
b) evaluating the need for action to prevent occurrence of nonconformities ?					
c) determining and implementing action needed ?					
d) recording of the results of the action taken (see 4.2.4) ? and					
e) reviewing preventive action taken ?					

Guidance Notes

1) Select a non-conforming part and use 52 a) through h) to check for effectiveness.
2) Select a non-conforming part and use 55 a) through e) to check for effectiveness.

96M11900-1-105-900, 96M-13531-1a
DR 7366
DR 7273 SPICEDEV

Objective evidence assessed / Observations / Comments / N/A explanation

QTPS disposition, root cause analysis
Reviewed corrective actions records of responses
follow up actions.
*Supplier corrective actions do not address RCCA.

*S: Satisfactory - **CAR**: Corrective action required – **Ma**: Major corrective action – **mi**: Minor corrective action*
*N/A: Not applicable - **N/E**: Not evaluated - **P**: Product - **M**: Management*

QUALITY SYSTEM QUESTIONNAIRE

ASSESSMENT QUESTIONS	KEY Requirements	S	CAR Number Ma or mi	N/A	N/E
8.5 Improvement					
8.5.1 Continual improvement					
49 Does the organization continually improve the effectiveness of the quality management system through the use of the quality policy, quality objectives, audit results, analysis of data, corrective and preventive actions and management review ?		✓			
8.5.2 Corrective action					
50 Does the organization take action to eliminate the cause of nonconformities in order to prevent recurrence (1) ?	P				
51 Are Corrective actions appropriate to the effects of the nonconformities encountered ?					
52 Is a documented procedure established to define requirements for : a) reviewing nonconformities (including customer complaints) ? b) determining the causes of nonconformities ? c) evaluating the need for action to ensure that nonconformities do not recur ? d) determining and implementing action needed ? e) recording of the results of the action taken (see 4.2.4) ? f) reviewing corrective action taken ? ***g) flow down of the corrective action requirement to a supplier, when it is determined that the supplier is responsible for the root cause ? and*** ***h) specific actions where timely and/or effective corrective actions are not achieved ?***					
8.5.3 Preventive action					
53 Does the organization determine action to eliminate the causes of potential nonconformities in order to prevent their occurrence (2) ?	M	✓			
54 Are preventive actions appropriate to the effects of the potential problems ?		✓			
55 Is a documented procedure established to define requirements for : a) determining potential nonconformities and their causes ? b) evaluating the need for action to prevent occurrence of nonconformities ? c) determining and implementing action needed ? d) recording of the results of the action taken (see 4.2.4) ? and e) reviewing preventive action taken ?		✓			

Guidance Notes

1) Select a non-conforming part and use 52 a) through h) to check for effectiveness.
2) Select a non-conforming part and use 55 a) through e) to check for effectiveness.

Objective evidence assessed / Observations / Comments / N/A explanation

individual improvement initiatives - 04-04-20, May '04, noted on Log (113 total)

Preventive actions evidenced at management Review, dated 5/25/04

Risk Management - Alert Activities.

Safety activities, reported on at MTM - @0550

yellow, green heath, Safety metrics

*S: Satisfactory - **CAR**: Corrective action required – **Ma**: Major corrective action – **mi**: Minor corrective action*
N/A: Not applicable - N/E: Not evaluated - P: Product - M: Management

{ Sustaining Eng. Plan
  ISS- MPLM-PLAN-015 Rev A

RCN : MA1633124

MWI 8[illegible]40.2

Bldg. 4619
Air Quality Sample - record - Tags

Annex A
(informative)

Bibliography

ISO 9000: 2000	Quality management systems – Fundamentals and vocabulary
ISO 9001: 2000	Quality management systems – Requirements
ISO 10011	Guidelines for auditing quality systems
EN 9100 – Section 1	Aerospace series – Quality management systems – Requirements (based on ISO 9001: 2000)

QUALITY SYSTEM QUESTIONNAIRE

ASSESSMENT QUESTIONS	KEY Requirements	S	CAR Number Ma or mi	N/A	N/E
7.5 Production and service provision					
7.5.1 Control of production and service provision					
56 Does planning consider, as applicable :					
- the establishment of process controls and development of control plans where key characteristics have been identified					
- the identification of in-process verification points when adequate verification of conformance cannot be performed at a later stage of realization	**P**	✓			
- the design, manufacture, and use of tooling so that variable measurements can be taken, particularly for key characteristics, and					
- special processes (see 7.5.2).					
57 Does the organization plan and carry out production and service provision under controlled conditions (1).		✓			
Do these controlled conditions include, as applicable :					
a) the availability of information that describes the characteristics of the product ? ✓					
b) the availability of work instructions, as necessary ? ✓					
c) the use of suitable equipment ? ✓					
d) the availability and use of monitoring and measuring devices ? ✓					
e) the implementation of monitoring and measurement ? ✓					
f) the implementation of release, delivery and post-delivery activities ? ✓					
g) accountability for all product during manufacture (e.g., parts quantities, split orders, nonconforming product) ? ✓					
h) evidence that all manufacturing and inspection operations have been completed as planned, or as otherwise documented and authorized ? ✓	**P**				
i) provision for the prevention, detection, and removal of foreign objects ? ✓	**P**				
j) monitoring and control of utilities and supplies such as water, compressed air, electricity and chemical products to the extent they affect product quality ? and			Obs → #9		
k) criteria for workmanship, which shall be stipulated in the clearest practical manner (e.g., written standards, representative samples or illustrations) ? ✓					

Guidance Notes

1) List the Part Number(s) used for this review

Objective evidence assessed / Observations / Comments / N/A explanation

ISS. Change Request SSCN-8692 - change evaluation form

PIRN # 57212-NA-0029A MELFI Hardware ICD Post-Rev B evaluation performed and response documented

Eng. Recommendation - K. Pierson.

Test Proc. # MTCP-FS-MPLM PT-303 10/28/03 Basic ✓ Current Vacuum Chamber - Calibrated devices listed

*S: Satisfactory - **CAR**: Corrective action required – **Ma**: Major corrective action – **mi**: Minor corrective action*
*N/A: Not applicable - **N/E**: Not evaluated - **P**: Product - **M**: Management*

Pressure gauges - 5yr cal cycle - operational check cal dt 5/98 - 5/03 (5 gages) might be confusing

{ Sustaining Eng. Plan
  ISS- MPLM-PLAN-015 Rev A

RCN : MA1633IR4

MWI 8240.2

Bldg. 4619
Air Quality Sample - record - Tags

QUALITY SYSTEM QUESTIONNAIRE

ASSESSMENT QUESTIONS	KEY Requirements	S	CAR Number Ma or mi	N/A	N/E
7.5 Production and service provision (continued)					
7.5.1.1 Production documentation					
58 Are production operations carried out in accordance with approved data ?		✓			
59 Does the data contain as necessary : ***a) drawings, parts lists, process flow charts including inspection operations, production documents (e.g., manufacturing plans, traveler, router, work order, process cards); and inspection documents (see 8.2.4.1) ? and*** ***b) a list of specific or non-specific tools and numerical control (NC) machine programs required and any specific instructions associated with their use ?***	P	✓			
7.5.1.2 Control of production process changes MWI 8040.2					
60 Are persons authorized to approve changes to production processes identified (1) ?	M	✓			
61 Has the organization identified and obtained acceptance of changes that require customer and/or regulatory authority approval in accordance with contract or regulatory requirements ?		✓			
62 Are changes affecting processes, production equipment, tools and programs documented ?	P	✓			
63 Are procedures available to control their implementation ? MWI 8040.2		✓			
64 Are the results of changes to production processes assessed to confirm that the desired effect has been achieved without adverse effects to product quality ?	P	✓			
7.5.1.3 Control of production equipment, tools and numerical control (N.C.) machine programs					
65 Are production equipment, tools and programs validated prior to use and maintained and inspected periodically according to documented procedures ? no samples noted	P				✓
66 Does validation prior to production use include verification of the first article produced to the design data/specification ? no samples noted	P				✓
67 Are storage requirements, including periodic preservation/condition checks, established for production equipment or tooling in storage ? no Samples noted					✓
7.5.1.4 Control of work transferred, on a temporary basis, outside the organization's facilities					
68 When planning to temporarily transfer work to a location outside the organization's facilities, does the organization define the process to control and validate the quality of the work ?	M	✓			✓

Guidance Notes

1) Clearly defined list or procedures

Objective evidence assessed / Observations / Comments / N/A explanation

Change request - SSCN 3578 4/08
SSCN 8692 - Verified authorized individuals

SSCN 003578 on MPLM (ISS-MPLM-PLAN-017

ISS-MPLM-PLAN-017 Rev C 10/03 Level 3 CCM in place (membership - CCB)
CBDI - MP3-00-0065
ECR - FD24-0032

Bldg 4619 - Air Quality Testing - record results noted on Tags

*S: Satisfactory - **CAR:** Corrective action required – **Ma:** Major corrective action – **mi:** Minor corrective action*
*N/A: Not applicable - **N/E:** Not evaluated - **P:** Product - **M:** Management*

ANSI-RAB QMS ACCREDITED

NQA
NATIONAL QUALITY ASSURANCE, USA

4 Post Office Square Road
Acton, MA 01720
Tel: (800) 649-5289
Fax: (978) 263-0785

ATTENDANCE ROSTER

CLIENT NASA - MSFC

LOCATION Marshall Space Flight Ctr.
Alabama, 35812

ASSIGNMENT NUMBER 04/35812/TV02/AS-503

AUDIT DATE June 22-25, 04

NAME PLEASE PRINT	TITLE	COMPANY	OPENING MEETING	CLOSING MEETING
Kelly Lubrieder	Assist Audit Manager	NASA	✓	✓
Mary DeMurray	SR. Quality Engineer	Hernandez Engineering	✓	✓
Mike Sweigert	Proc. Analyst	NASA	✓	✓
T. Jerry Williams	Sup. Proc. Analyst	NASA	✓	✓
Jennifer Matthews	Contracting Officer	NASA	✓	✓
Karen Iftikhar	EQ ISO Representative	NASA	✓	✓
PAT SCHULTZ	HUMAN RESOURCES	NASA-MSFC	✓	
JOHN PEA	ORG REP	NASA-MP02	✓	✓
Bessie Lee	CM MPLM FD24	COLSA	✓	
Kathy Moorhead	DM NODES 2/3	COLSA-ED43	✓	✓
Lisa Cooper	NODES 2/3 CM	COLSA-ED43	✓	✓
MARTHA LOFTON	SP/FD/mp CM	NASA	✓	
Jim J. Lindsay	ED20	NASA	✓	
Caroline Wang	CD30/CAER ISO Lead	NASA	✓	✓
Frank Knight	XP01/SME	QTEC INC	✓	✓
DAN ADAMS	Environmental Engineer	NASA	✓	
JEFF SAXON	ED20	NASA	✓	
Dena Yell	Mgmt. Analyst	NASA	✓	✓
Billie Swinford	EO Mgr.	NASA	✓	✓
Axel Roth	Assoc. Director	NASA	✓	

ANSI-RAB QMS ACCREDITED

NQA
NATIONAL QUALITY ASSURANCE, USA

4 Post Office Square Road
Acton, MA 01720
Tel: (800) 649-5289
Fax: (978) 263-0785

ATTENDANCE ROSTER

CLIENT NASA MSFC

LOCATION Marshall Space Flight Ctr.
AL 35812

ASSIGNMENT NUMBER 04/35812/TV02/AS-503

AUDIT DATE June 22-25, 04

NAME PLEASE PRINT	TITLE	COMPANY	OPENING MEETING	CLOSING MEETING
Terry J. Hamm	S&MA Alt. Org. Rep.	NASA/MSFC	X	X
Roy. W. Malone Jr	S&MA Deputy Dir	NASA/MSFC	X	X
Douglas Blackwell	TDDL Asst. Dir	NASA/MSFC	X	
JIM CARTER	DIR, CENTER OPERATIONS	"	X	X
Tom FLEMING	Assoc Dir - SCIENCE	NASA/MSFC/SD01	X	
Sharal Huegele	Org Rep, RS	NASA/MSFC	X	X
James B. Thomason	HEI PAC Engineer	HET	X	X
DEBORAH Wills	DIRECTIVES MANAGER	NASA/MSFC	X	
Abbie Johnson	Paralegal Spec.	NASA/MSFC	X	X
Lloyd Love	Electronics Engineer	NASA/MSFC	X	X
Steve Durham	Manager IR&CD	NASA/MSFC	X	X
DOM AMATORE	Mgr-Media+Cater(acting)	NASA/MSFC	X	
Maria Hicks	Org. Rep - CD03	NASA/MSFC	✓	✓
J. Michael Cole	MSG Project Manager	NASA/MSFC	X	
Thomas S. DOLLMAN	SD ISO/MMS REP	NASA/MSFC	✓	✓
Van Blankenship	Test&Eval Control Group Lead	NASA/MSFC	X	
TIM CORD	FACILITIES	NASA/MSFC	X	
TERESA VANHOOSER	FLIGHT PROJECTS	NASA/MSFC	X	
Ed Rapka	Engineer/DSO Rep.	NASA/MSFC	X	X
Wanda K Wood	Audit Manager	NASA/MSFC	X	

NQA ISO AUDIT EXIT BRIEFING
SIGN IN SHEET

DATE: 06/25/04 ORG AUDITED: MSFC BLDG/RM 4203/1201

	Name	Office Code	Phone
1	John W. McPherson	HSI-PAC	4-7479
2	Jerry J. Baldwin	ED43	4-0797
3	Sheryl Goddard	PS01	4-0253
4	Mack Blackman	CD10	4-7509
5	Charles Chen	CD02	4-0119
6	Joan Trolinger	TD02	4-7068
7	Sandra Turner	CD03	4-8704
8	Herb Shivers	ED40	4-8903
9	NELSON PARKER	ED40	4-2453
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			